U.S. Patent Office

Patent Office papers, 6

Invention and Patentability

UNDER THE PATENT STATUTES AS APPLIED TO SO-CALLED PRINTED MATTER AND METHODS OR SYSTEMS OF DOING BUSINESS

A paper read October 22, 1913, before the Examining Corps of the United States Patent Office

BY

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WASHINGTON, D. C.
1914

Invention and Patentability Under the Patent Statutes as Applied to So-called Printed Matter and Methods or Systems of Doing Business.

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There are certain classes of invention which by their nature have presented a question of patentability under the Statute. The class of printed matter is one of these.

As this class of inventions is included very largely in the class of Bookbinding, No. 11, which is now classified in Division 5, questions relating thereto are constantly arising before us in that division for consideration in various and unexpected forms.

The sub-classes embracing most of the so-called printed matter are: Leaves, Leaves and Covers, Books and Covers, Tickets, Indexing, Bank Notes, Checks and Bonds, Postal and Internal Revenue Stamps, Writing Tablets and Writing Tablets, Manifolding.

Without going far into the distinction between copyrights and patents in this art, it may be stated that prior to the year 1879, many copyrights were taken out on printed matter subjects, such as blank books and leaves therefor, ruled in different ways forming rows and columns, headings therefor, spaces for totals, items of special kinds for bookkeeping adapted for different kinds of business or purposes of various natures, which in the cases of Baker *vs.* Seldon, U. S. Supreme Court, 1880, C. D., 422, and others of like import, the United States Supreme Court held were not properly the subject of

copyrights and could not be protected under the copyright laws. In the case of Baker *vs.* Seldon, Justice Bradley delivering the opinion of the court, said:

> "The description of an art in a book entitled to the benefit of copyright lays no foundation for an exclusive claim to the art itself. The description alone can be protected by copyright. The art can only be secured, if it can be secured at all, by letters patent.
>
> "A work on the subject of bookkeeping, explanatory either of old systems or of an entirely new system, considered as a book conveying information on the subject and containing detailed explanations of the art, is the subject of copyright, but the use of the peculiar systems of bookkeeping described can not be protected thereby. . . .
>
> "The conclusion to which we have come is, that blank account books are not the subject of copyright; and that the mere copyright of Seldon's book did not confer upon him the exclusive right to make and use account books ruled and arranged as designated by him and described and illustrated in said book."

Very many cases are presented to the Patent Office for patent protection, which, prior to the decisions referred to would no doubt have been sent to the Library of Congress for copyright.

The office and the courts of the country have had difficulty in determining to which statutory class such patents belong.

In the case of Munson *vs.* City of New York, 1888, C. D., 253, the patentee claimed—

> 1st. "The preserving, filing, and verifying of bonds and coupons, certificates and all similar documents by the means and in the manner substantially as herein set forth."
>
> 2d. "The book or register constructed and used as and for the purposes set forth."

Mr. Justice Gray of the United States Supreme Court delivered the opinion of the court, and in it, said:

> "If upon the face of the specification this could be considered as an art, machine, manufacture, or composition of matter within the meaning of the patent laws (upon which we express no opinion), etc."

indicating that the United States Supreme Court did not attempt to classify the invention then before it.

The court in the case of the Cincinnati Traction Co. *vs.* Pope, hereinafter referred to, said:

> "We think the device (the street car transfer) should be classed as an article and thus a 'manufacture' within the Statute."

In still other cases where the claims were for means, tickets, receipts, etc., the courts have explicitly stated that they did not decide whether the invention was an improvement in an art or one for a machine.

In examining an application in this art as in all others—

> "The office should not overlook the fact that it must be shown that invention was exercised in producing the article or machine, and that it is not every person who has made a new or useful thing who is entitled to a patent. It is not sufficient that an applicant shall have made a new article or machine; but he must have made an *invention or discovery*. It must be the result of the exercise of the inventive faculty, not simply of the mechanical faculty." *Ex parte* Devin, 450 O. G., 709; 1888 C. D., 70.

It will be apparent that very many of the alleged inventions do not measure up to the tests and requisites of invention as defined in the patent statutes, rules, and decisions and as applied in the United States Patent Office. Many of these cases involve subject-matter new and useful and exhibit a high degree of mere ingenuity, but not patentable invention, and in the opinion of

many attorneys as expressed to the writer of this paper, are entitled to some sort of protection, as much at least, if not more, than it was supposed they used to derive under the copyright law. I personally am inclined to agree with them to some extent, if a provision of law might be enacted without injury to the present patent system which would give this protection and at the same time would not take from the public any rights which it now enjoys, and would not limit the exercise of his craft and skill and trade by the worker in these lines. It is difficult, however, to see how this can be accomplished, and unless it is, it is clear no protection under our theory of patent protection or monopoly on this class of cases can be obtained.

Printed matter, which it may be said is merely paper or other suitable substance bearing lines and indicia on it produced by printing or writing, does not, of course, of itself do work or of itself change the physical condition of any material object, but it is still very useful and necessary in carrying on the great work and activities of the world in many ways, especially in carrying on business.

METHODS AND SYSTEMS OF DOING BUSINESS.

Methods of bookkeeping, systems of transacting business, recording, tabulating, and the like are not regarded by the office of the courts as inventions nor subjects for letters patents, as indicated by Ex parte Abraham, 1869 C. D., 59; Ex parte Berolzheimer, 1870 C. D., 33; Ex parte Bierce, 1877 C. D., 47; Ex parte Moeser, 123 O. G., 655, and others for the reason that they produce no physical results proceeding directly from their operation.

Robinson on Patents, 1890 edition, Vol. 1, page 249, defines an "art" as follows:

> "But though an art embraces so wide a field of inventive skill, it includes only such operations as are capable of producing physical effects. Every invention, when applied according to the design of its inventor, must accomplish some change in the character or condition of material objects."

The settled and accepted definition of the term "art" is to be found in United States Supreme Court decisions—Corning *vs.* Burden, 15 Howard, 252; Tilghman *vs.* Proctor, 102 U. S., 707; Cochran *vs.* Diener, 94 U. S., 780; Risdon *vs.* Medart, 71 O. G., 751; Boyden *vs.* Westinghouse, 83 O. G., 1067, and Expanded Metal Co. *vs.* Bradford, 137 Fed., 870; but it may well be questioned whether the United States Supreme Court has ever stated the entire range of meaning belonging to the term "art." It may be questioned whether claim 5 of the Bell patent sustained by the United States Supreme Court covered a process such as clearly defined in the above decisions. Was there a change "effected in the nature of any substance by the art set forth in the claim? It is certainly difficult to show that any change in the *nature* of the impulse took place during transmission or reproduction. (Knight's Patent Office Manual.)

It may, however, be stated that whether or not in the future any definition of an art including a *method, process,* or *system* of doing business which is patentable may be laid down, it has not yet been done by any competent authority and as stated by Examiner-in-Chief Hodges, in *Ex parte* Abraham, 1869 C. D., "it is contrary to the spirit of the patent law as construed by the office for many years to grant patents for methods or analogous systems of bookkeeping," etc.

ARTICLE OR MANUFACTURE.

Inventions of this type are of several kinds. There are those involving merely a piece of paper sometimes having tabs, ruptured fibres, etc., provided with written or printed lines and indicia upon one or both surfaces; those which include the above elements and weakened tearing lines wholly or partially across them and those embracing a plurality of the above pieces of paper in various alleged combinations.

In determining patentability of the invention *claimed as an article or manufacture,* it was held by Commissioner

Marble in *Ex parte* Lee, 1880 C. D., 174, in which the invention claimed was as follows:

> Claim 1. "The combination of two stubs or counterparts with the contract ticket substantially as described."
>
> Claim 2. "The arrangement of the two stubs relatively to the coupons and the list of terminal stations in the manner and for the purpose specified."

That—

> "The patentable features of a railway or other ticket like those of any other substantive thing must depend upon peculiarities of mechanical construction."
>
> "The printed matter upon a ticket is nothing more than an arbitrary direction as to how such ticket is to be used, and can have no bearing upon the patentability of the ticket itself."

The Hawes patent No. 63,889, for a hotel register, in which the claim read as follows was held valid:

> "A hotel register book with the margin of its leaves occupied by advertisements, substantially as described." Hawes *vs.* Washburne et al., 50 O. G., 491.

In Library Bureau *vs.* Macy, 148 F. R., 380, in discussing patents Nos. 623,857 and 624,597, the court held that the arrangement of color signals was not invention but that the system of tabs upon the cards did involve invention.

In the case of Mitchell *vs.* International Tailoring Co., 170 F. R., 91, the claim, which specifically describes the article, reads as follows, and was sustained by the court:

> "1. The herein described advertising device comprising a card-board sheet of substantially commercial letter paper form and size, scored transversely to form upper and lower flaps to fold upon the intermediate portion, the entire inner side of said sheet being adapted to bear a

printed letter with proper letterhead upon the upper flap portion and a signature at the bottom, one of said flap portions comprising a gift to be detached from the remainder, and means for sealing the free edges of the sheet, when folded for mailing, substantially as described."

The court said:

"The folded sheet seems to me to involve no invention, but the making of one of the folds a gift likely to preserve the name and address of the sender may do so. While the patent certainly seems very obvious, I can not say, because of facts within common knowledge, that it is void on its face for lack of novelty or invention."

The infringement of the Gellenbeck patent, No. 482,899, was the basis of the suit in the Benjamin Menu Card Co. *vs.* Rand, McNally Co. et al., 210 F. R., 285.

Claim 1 of the patent read as follows:

"The combination, with a menu card, of two or more checks detachably secured thereto, two of said checks being designated, respectively, as 'guest's check,' and as 'cook's check,' so as to make the remainder incomplete as a bill of fare, and hence useless for another guest."

This invention was intended primarily for use on dining cars.

In this case, the United States Circuit Court which rendered the decision affirming the validity of the patent discussed it as follows:

"The defense urges:

"That it is not a patentable invention within the intent of the patent law, it being only for a piece of cardboard paper, with printed matter or composition on both sides thereof, and divided on one side by perforated lines and employed in a system of doing business."

The court said:

"If there is invention in it, I find no ground for objection that the elements or ingredients here

> employed are not themselves of patentable nature. The fact that the structure may be of cardboard with printed matter upon it does not exclude the device from patentability according to the practice of the Patent Office, as shown by the numerous patents introduced for the defense of anticipation; and the patentability of devices of like quality has been repeatedly recognized in decisions. Citing Waring *vs.* Johnson (C. C.), 6 Fed., 500; Thomson *vs.* Citizens' National Bank, 53 Fed. R., 250, etc."

It is asserted that the patent is void because "each of its claims is for the combination of a whole with one or more divisible parts thereof." This objection is that the invention is claimed as a "combination."

In Robinson on Patents, 155, this definition of a combination is given:

> "When the elements are so united that by their reciprocal influence upon each other, or their joint action on their common object, they perform additional functions and accomplish additional results, the union is a true combination."

Whether this term combination was aptly given to this union of bill of fare and meal checks, or whether the invention should have been denominated "an article" as suggested by the learned experts for the defense, is not essential in view of what is actually shown. Cardboard or paper have long been used for coupon tickets of various kinds, for various uses, perforated upon the desired lines for separation, with printed matter arranged upon opposite sides as required. Printed bills of fare and printed meal checks are old. Nothing new can be claimed in either of these simple elements, *but there may be invention in the thought* to bring together the bill of fare, with its three courses, and the three required meal checks, so that they shall co-operate for a common object and enlist the passenger (involuntarily) in the work of detection or avoidance of fraud.

The *use here employed does not seem so clearly analogous to that of the prior devices,* nor is the want of invention so

apparent that the prima facie force of the patent should be destroyed, especially in view of the utility and extended use shown in this record.

One of the most interesting cases in this art is the recent one of the Cincinnati Traction Co. *vs.* Pope, decided by the Circuit Court of Appeals for the Sixth Circuit, 210 F. R., 443, before Knappen and Denison, Circuit Judges, and Sater, District Judge. Claim 8 of the Pope patent upon which suit was brought, clearly discloses the subject-matter of the invention and reads as follows:

> "8. A transfer ticket comprising a body portion and a coupon and further provided with conventional indications to constitute a complete transfer ticket for one part of the day when said body portion is used separately and a complete transfer ticket for another part of the day when said body portion and coupon are used together."

The court said:

> (1) "The patent is assailed as relating merely to 'a method of transacting business, a form of contract, a mode of procedure, a rule of conduct, a principle or idea, or a permissive function, predicated upon *a thing involving no structural law*;" and counsel say that the ticket in question 'has *no physical characteristics* which enable it to be distinguished from any other transfer ticket or from any other printed slip of paper.' If this criticism is well taken, the subject-matter is not within the patent statute."
>
> (2) "But while the case is perhaps near the border line, we think the device should be classed *as an article* to be used in a method of doing business, and thus a "manufacture" within the statute."

Broadly stated:

> "The term 'manufacture,' as used in the patent law, has a very comprehensive sense, embracing whatever is made by the art or industry of man, not being a machine, a composition of matter, or a design."

"The device of the patent *clearly involves physical structure.*"

"The presence of conventional indications and legends does not rob the structure of patentability. In more than one of the cases cited, the structure sustained as patentable bore conventional indications and information."

"It may well be, *that given the idea* of the Pope patent, the expected skill of the printer or street car man would have been sufficient to determine the arrangement of printed text, and even the form of legend, etc. We think, however, the device of the structure of the Pope transfer must be held to involve invention."

In the Rand, McNally Co. *vs.* Exchange Scrip Book Co. case, 187 Fed. R., 984, which involved the patentability of a ticket resembling an ordinary mileage ticket except that the indicia on the coupons indicated money value instead of miles, the court in holding the patent valid said:

"There is no ground, under the circumstances, for saying that the *concept* is necessarily obvious. It is equally probable that it was this new *concept* that made the wider use of interchangeable tickets commercially obvious."

"Nor do we think that this patented concept is nothing more than a business method. Its use *is a part of a business method. The ticket patented* is *not* a method at all, but a physical tangible facility without which the method would have been impracticable and with which it is practicable. And this is the status of thousands of like facilities that, once designed and put into use, have become the first of a new business method; and patents on such facilities have been sustained."

This patent was sustained by the court.

This case was later reopened for consideration of new

evidence submitted by the defence and remanded to the lower court; before trial however a compromise was reached and the case settled.

The above cases pertaining to the printed matter art without question show that inventions in this art may be included under the patent statute and that valid patents may be obtained therefor and that patentability must depend on the exercise of the inventive faculty, that the claims must be drawn to structure and the usual tests applicable to mechanical structure patents must be applied to determine the question of patentability.

Foreign Patents and Foreign Applications Mentioned in Sections 4886-4887, Revised Statutes.

A paper read March 25, 1915, before the Examining Corps of the United States Patent Office

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WASHINGTON, D. C.
1915

Foreign Patents and Foreign Applications Mentioned in Sections 4886 and 4887, Revised Statutes

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INTRODUCTION.

The object of this paper is a discussion of Sections 4886 and 4887, Revised Statutes, with regard to the foreign patents and foreign applications mentioned therein, and includes statements of the practice of this Office in cases which involve foreign patents, foreign applications and foreign publications.

In actions under Section 4886, it is important to know either the date of the foreign patent as a patent or its date as a printed publication or, possibly, both.

There is an essential difference between a patent considered either as a contract or a public document and a printed publication. The government may or may not disclose the patented invention by means of a printed publication, also the printed publication may have one date and the patent may have been signed, sealed and delivered on another date.

DATE OF PATENT.

In considering the patent date, it has been held that no patent exists until there is an actual grant of the monopoly in the invention by the foreign government.

Telegraph Co. et al. *vs.* Telephone Co., C. D. 1890, p. 403.
De Ferranti *vs.* Westinghouse, C. D. 1890, p. 114.
Bell Telephone Co. *vs.* Cushman et al., C. D. 1893, p. 546.
Merrell-Soule *vs.* Milk Co., 215 Fed., 922.

The point is of no importance in so far as British patents are concerned, since they are all, with the exception of secret patents, published before they are sealed and since the earliest date is the controlling one, the sealing date of a British patent is of no importance under Section 4886.

With German patents, it has been argued that the effective date under Section 4886 is prior to the "ausgegeben" date, but the Court held, from the evidence before it, that there was no actual monopoly grant of patent rights until the "ausgegeben" date.

Merrell-Soule *vs*. Milk Co., 215 Fed., 922.

It may be noted that the "erteilung" or bestowal of the German patents is published in the Patentblatt and in the Reichsanzeiger two weeks prior to the "ausgegeben" date and that the numbers of German patents do not run according to the "ausgegeben" dates but are given numbers as of the date of "erteilung."

In Austria, the lapse of time between the date of "erteilung" or bestowal, as indicated in the Patentblatt, and the "ausgegeben" date is about six weeks. The "ausgegeben" date has been uniformly held in this Office to be the effective date under Section 4886.

Printed copies of Swedish patents are on sale about nine days after the patent grant, according to Singer's—Patent and Trade-Mark Laws of the World.

The date of grant of Dutch patents which have been received by this Office since June, 1913, is indicated in the heading by the word—"Dagteekening."

The word "Udstedt" in the heading of a Danish patent indicates the date of grant or issue.

Concerning Swiss patents, it has been held that the date of registration thereof, giving it a number, is of no avail unless the patent is printed and published and that the date of publication is controlling.

Roschach *vs* .Walker, C. D. 1899, p. 157.

In this connection, it might be well to state that the heading of a Swiss patent gives only the date of filing of the application.

The grant of the patent is indicated in the Swiss Patent Liste, which is published twice a month and gives a list of patents granted and refers to the date when printed copies may be obtained. The information obtained from the Swiss Patent-Liste as to the exact dates of grant and publication is not sufficiently definite and it would seem worth while to induce the Swiss government to print, in the heading of the patent, the date on which it was granted, and the date on which it was published.

This suggestion applies with nearly equal force to the British patent specifications.

A German Gebrauchsmuster patent is a patent within the meaning of Section 4886.

Law Examiners Decision in Sexton *vs.* Reis, Interference No. 37,770.

In the case of Robin *vs.* Muller et al., C. D. 1904, p. 569, the Commissioner said that the effective date of the French patent 3628 is May 23, 1900, the date of grant and delivery, because it was established that this foreign patent was granted and delivered prior to any date alleged by Robin and in view of the French law then in force, that as such patents were open to the public, it must be held that this French patent 3628, and addition, was not a secret patent and that its grant and publication are a bar to the issue of a patent to Robin.

In the case of French patents prior to 1902, I am informed that the delivré date is the only one available.

I am informed, from a copy of a letter of a French agent in a pending case, that the filing date of a French application is the date of the signature of the ministerial decision recognizing the regularity of the application and indicating the patent numbers. From this date, the application may be inspected upon the payment of a fee, though no copy may be made. The deliverance of the patent is advertised in the official Bulletin of Industrial and Commercial Property and since June 19, 1913, the public may obtain copies of the specification and drawings on the payment of a fee.

The date of publication is indicated in the official Journal some weeks in advance and every one knows exactly

from what date they will be able to secure a printed copy of the patent.

In the case of Schoerken *vs.* Swift et al., 7 Fed., 469, the Court said that the word "patented" as used in Section 4886 would seem, from the significance of the word, to mean only inventions laid open to the public and protected to the inventor, but the case turned on the question of evidence, the Court holding that the French patent which was not published, was not a secret patent because a certified copy of the patent was presented in evidence, and that a copy of a secret patent could not be obatined. The Court held that the French patent was a patent within the meaning of the law, and would operate as a bar.

Judging from the decision in the cases of Schoerken *vs.* Swift, and Robin *vs.* Muller, cited, and the letter of the French agent, a French patent is a reference under Section 4886, as of the date when the patent is delivered and open to the public. I am not prepared to say, from the information at hand, that this is the delivré date, especially when the uniform practice in this Office has been to use the publié date.

Still, if there is an actual grant of the monopoly of an invention in France as of the date of delivery appearing on the heading of the patent, the delivré date is the controlling one.

To use the patent date effectively under Section 4886, the invention must be actually patented, i. e., covered by the claims of the patent, if the patent has claims.

The question of the identity of the invention patented is taken up later in connection with the discussion of Section 4887. The word "patented" means the same thing in each section.

Queen *vs.* Friedlander, 149 Fed., 775.

It is hoped that authoritative directions may be given as to the effective dates under Section 4886 of all foreign patents as patents, and as printed publications, and that provision be made for printing these dates on the headings of all foreign patents which are received by this Office.

While the date of foreign letters patent has always

been considered the controlling one, irrespective of the date of publication, and whether the patent was a printed publication or not, it is suggested that this is an undue hardship on American inventors, who, while not being charged with notice of public use of the invention abroad, are barred from receiving a patent in this country on an invention patented in a foreign country more than two years prior to the filing date of their applications here, whether the foreign patent is a printed publication or not.

For instance, though no amount of public use in Italy would bar an inventor from obtaining a patent in this country, he might be barred by an Italian patent, the contents of which can only be learned by sending to the Italian patent office for a certified copy of the letters patent. Italian patents are not printed publications.

The only knowledge derived from foreign sources which *should* operate as a bar under Section 4886 by way of dedication to the public of this country, is that obtained from printed publications.

However, as the law stands, a foreign patent may be a bar under Section 4886, whether the subject-matter thereof is disclosed in a printed publication or not.

> Sirocco *vs.* Sturtevant, 220 Fed., 137, citing Ireson *vs.* Pierce, 39 Fed., 795, and Bell Co. *vs.* Bevin, 73 Fed., 469.

SECRET PATENTS (SECTION 4886).

It was intimated in Schoerken *vs.* Swift, cited, that a secret patent is no bar under Section 4886 to the issue of a patent in this country.

In Robin *vs.* Muller, the Commissioner said that while a prior foreign patent under Section 4886—Revised Statutes, is a bar to the grant of a patent in this country, an apparent exception exists under the authorities where the foreign patent has been kept secret.

Again, in Brooks *vs.* Norcross, 2 Fischer, 661, the court said, speaking of the word "patented" as it occurred in Section 7 of the Patent Act of 1836, which is similar to Section 4886 of the Revised Statutes, "the word 'patented' as here used must of course mean covered and made known to the world by a public patent, so as to

bring home to the public generally, and probably, a knowledge of its existence and deprive any one of the credit and protection of being original, if he afterward construct a like machine. . . . Nothing can be within the spirit of the law except what is public and thus known. The Court held that novelty is not negatived by any prior private patent granted in a foreign country.

The only secret patents, of which I am aware, that are received by this Office, are those British patents upon which the ban of secrecy has been removed. These will be considered later, in the discussion of British procedure.

SECRET PATENTS (SECTION 4887).

While it has been said that the word "patented" means the same thing in Sections 4886 and 4887 (Queen *vs.* Friedlander, 149, Fed., 775), a secret patent, while not a bar under Section 4886, will probably prevent an an applicant from receiving a patent in this country under the conditions stated in Section 4887.

In the case of De Florez *vs.* Raynolds, C. D., 1880, p. 289, the court said:

> "We fix the date of Nov. 27, 1862, and not the date of Feb. 20, 1863, because we regard it as the clear intention of the provisions of the law limiting the duration of a United States patent, patenting an invention previously patented abroad to the same inventor, to give the patentee a specified term from the date at which his foreign patent took effect as a foreign patent in his favor. . . . This view is not necessarily applicable to a case where a foreign patent to one inventor is set up to defeat a United States patent to a different inventor. In such case, the manifest intention of the law is that a foreign patent shall apply only as of a date when the invention was published or was accessible to the public and not of an earlier date from which the inventor may have enjoyed the benefit of the foreign patent as a patent."

The decision in this case was quoted with approval in the opinion of the Secretary of the Interior in the case of

Rumpff et al. *vs.* Köhler *vs.* Krügener, C. D., 1883, p. 111.

The question of the secrecy or publicity of an Austrian patent can not under Section 25 of the Act of 1870 affect the duration of a patent for the same invention in this country.

Elec. Co. *vs.* Arnoux et al., 17 Fed., 838.

Section 30 of the British Patent Act provides for what are known as secret patents on instruments or munitions of war. The patent is assigned to the Secretary of State for war, or the admiralty, who may certify to the comptroller that, in the interest of public service, the particulars of the invention should be kept secret. If the benefit of this section is waived at any time by the Secretary of State, or the admiralty, the specifications shall thenceforth be kept, and dealt with in the ordinary way.

The sealing of such a patent is not published in the official Journal, but when the benefit of the law is waived by the Secretary of State, or the admiralty, the specifications are published and the date of publication is given in the heading thereof.

While the controlling date of such a patent under Section 4886 is the date of publication, it is effective, nevertheless, as a bar under Section 4887 as soon as patented. The date of the application is determined as hereinafter stated, according to the character of the application.

CITATION OF FOREIGN PATENTS.

In Robin *vs.* Muller, cited, it was held that where the date and contents of a foreign patent are proved, the burden is upon the party against whom it is used, to show that it was not published or open to public inspection on the date which it bears.

Also, in the case of Hummel *vs.* Tingley, C. D., 1900, p. 2, the Examiner cited a foreign patent as a reference. It appeared upon its face that it was issued at a date prior to the filing date of the application under consideration. It was contended by the applicant that the foreign patent was not granted at the date shown on its face, but it was held that when a foreign patent is cited, the

burden is shifted to the applicant to prove that said patent was not entitled to the date which made it effective as an anticipatory publication.

Where an application was rejected on a foreign patent, Held, the Examiner properly refused to withdraw the patent as a reference in the absence of an affidavit by the applicant, fully identifying it as his own or filed on his behalf, with his knowledge and consent.

Ex parte Wlost, C. D., 1911, p. 57.

In addition to the data required to be given by Rule 66, the Examiner, when citing foreign patents, will include a statement identifying the particular figures of the drawing relied upon as a showing of the anticipating structure. If the drawing of the foreign patent comprises a single sheet, the Examiner will say "(one sheet)." If the drawings on the foreign patent, as issued, comprise more than one sheet, the particular figures and numbers of sheets will be indicated.

The purpose of this order is to give applicants and attorneys information respecting foreign patents cited as references, so that photographic copies thereof may be ordered without unnecessary correspondence and delay.

Order 2096, Jan. 21, 1914.

FOREIGN PUBLICATIONS.

It has been held that the so-called publications made in the British Official Journal and the German Imperial Gazette concerning applications for patents, and the laying open of such applications to the public inspection, do not constitute either publications of, or patents for, the inventions involved. Parkins *vs.* Jenness, 1893, C. D., p. 64.

The practice in Austria, however, differs from that in England and Germany in that the Patentblatt does more than merely identify the application. It publishes a description of the invention itself, but is without drawings, and while it is doubtful if such a disclosure in many cases would be operative as a publication under Section 4886, it is possible that in some cases, the invention would be described with all the necessary clearness.

The disclosure, to be effective for this purpose, should enable one skilled in the art to practice and fully understand the invention without experimentation, and must be as definite as specifications for patent in this country.

Badische Fabrik *vs.* Halle, 94 Fed., 163.
Mattress Co. *vs.* Whittlesley, Fed. Cas., 18058.
Western Elec. Co. *vs.* Tel. Co., 88 Fed., 505.

The date of publication, "offentliggjort" is at the end of a Swedish specification, while in the case of Norwegian patents, the "offentliggjort" date is in the heading.

The dates of publication of Dutch and Danish patents are found in the headings thereof by the expressions — "Octrooischrift uitgegeven" and "Bekendtgjort," respectively.

QUESTIONS ARISING UNDER SECTION 4887

The most important questions arising under Section. 4887 regarding the word "patented" are the date of the actual patent grant, the identity of the invention patented, and the identity of the patentee.

In order to operate as a bar to the grant of a patent in this country, the foreign patent must be actually issued under the seal of the foreign government.

Bell Telephone Co. *vs.* Cushman, C. D., 1892, p. 546.

In the case of any country, excepting Great Britain, if we have a copy here we may be assured that the patent has been granted.

In the case of British patents, there is a wide variation possible in the date of sealing and since the specification and drawings are usually printed and ready for public dsitribution, two or three weeks after the acceptance of the complete specifications, the receipt in this Office of the printed copies of the specification and drawing is no evidence that the patents have been sealed.

There is no indication on the heading of a British patent specification as to its sealing date and it is important that this be known.

It is also important to know the actual or effective

filing dates of British patents because of the complications arising under the British practice. For this reason, a separate consideration is given of the British practice in so far as it may influence our practice under Section 4887.

The sealing of a British patent takes place according to the statute as soon as may be, and not after the expiration of fifteen months from the date of the application. Section 12-2—British Patents & Designs Act.

There are four exceptions to this rule, however, nineteen months being allowed where an extension of time was allowed in which to leave the complete specification and the period is extended also in the case of the death of the applicant, or neglect to pay the required fees, in which cases, the patent may be sealed any time within twelve months after his death, Section 12-3, or the period may be extended on the payment of fees, Section 12-4. Also, when an appeal has been taken, the patent shall be sealed at such a time as the law officer may direct. Section 12-2.

The date of sealing, if the patent has been sealed, may be learned on inspection of the British Official Journal in the Library.

In this connection, it may be stated that the contents of this Journal are:

1st. Applications.
2d. Specifications accepted.
3d. Specifications open to public inspection before acceptance.
4th. Patents sealed.
5th. Printed specifications published.
6th. Patents void.
7th. Applications abandoned.

There are cases arising under Section 4887 in which the applicant acknowledges the filing of a patent application in a foreign country more than twelve months prior to the date of filing in this country. A valid patent could issue on the domestic application, provided that there has been no previous grant of the foreign patent.

When, therefore, such an application is ready for allowance, the applicant should not be required to prove that

the British patent, for instance, has not been sealed and unless the grant of the patent is noted in the "Official Journal" before referred to, the case should be passed to issue (Commissioner's Order No. 1226, Sept. 6, 1898). This order was issued under the old seven months rule, but the same practice prevails under the present law, allowing an interval of twelve months between the filing of the domestic application and the filing date of the foreign application.

To hold up such a case, if the applicant has planned to have his foreign patent issue on a certain day, might result in the issue of his foreign patent which would then be a bar.

It is sometimes important to decide the effective filing date of a British application and the printed specifications of British patents take so many different forms that it is deemed advisable to give them some consideration.

Under Section 16 of the Patents and Designs Act, several provisional specifications, if they cover cognate inventions, or modifications, may be consolidated by filing a single complete specification to cover the same. The date of a patent granted on such an application is the date of the earliest of such provisional specifications but in considering the validity thereof and for the purpose of the act with respect to oppositions to the grant of a patent, the Court or Comptroller shall have regard to the respective dates of the provisional specifications relating to the several matters claimed therein.

Also, under Section 6, sub 2 and 3, where there is a departure in the complete specification from the invention disclosed in the provisional, the provisional specification may be canceled, or where there is matter common to the two applications, the comptroller may allow the original application to proceed so far as the invention included both in the provisional and the complete specifications is concerned, and treat the claim for the additional invention included in the complete specification as an application for that invention made on the date at which the complete specification was left.

In the case of In re Swinburne, C. D. 1902, p. 537, it was held that, for purposes of Section 4887, Rev. Statutes,

the date of an English application was the date of filing of the provisional specification. Under the English law at that time, however, no departure was allowed in the complete specification from the invention disclosed in the provisional. Any departure would render the patent void.

Ex parte Smith, C. D. 1898, p. 275.

Hence, In re Swinburne should be applied in the light of British law as it now stands, and it has been held that where the provisional specification was canceled under provisions of the act, the date of the British application for purposes of Section 4887 is the date of the complete specification.

Ex parte Hayes, 209 O. G., p. 317.

When there has been a consolidation of provisional specifications, as before mentioned, the date of the application for the purposes of Section 4887 is the date of the earliest provisional specification disclosing the invention.

Where there is a departure in the complete specification from the invention disclosed in the provisional, and the provisional has not been canceled, the controlling date of the application for the new matter is the date of the complete specification.

Some British patents, when the complete specification involves a departure from the invention disclosed in the provisional, have a peculiar heading, in which two dates are given. The patent granted in such a case is given the old serial number, but redated to indicate the filing date of the complete specification. For instance, in the provisional specification filed July 12, 1912, and numbered 16334, the complete specification was filed February 12, 1913, and the patent redated.

The heading on the drawing appears:

A. D. 1913, Feb. 12, No. 16334^{12}—the exponent showing that the provisional specification was filed in 1912.

The complete specification is found in the bound volume for 1912.

Also, where the application is divided the heading

assumes a similar character. For instance, the application 19537 of 1912 was filed August 26, 1912, and divided, the parent application going to patent as No. 19537 of 1912. The divisional application became patent No. 5020 of 1913, and bore this heading:

A. D. 1912—Aug. 26, No. 5020^{13}.

The exponent in the case indicates the date of filing of the divisional application. The effective filing date of the application would appear, however, to be August 26, 1912.

When British applications are abandoned they are usually not published and knowledge of their abandonment may be obtained by inspection of the Official Journal.

The only apparent exception to this is where an applicant has claimed the filing date of the application in a foreign country under the convention. These applications are open to public inspection twelve months after the filing of the provisional specification, whether the complete specifications are accepted or not. If they become abandoned, they are printed and published about fifteen months after the filing of the application.

FOREIGN APPLICATION AS A CONSTRUCTIVE REDUCTION TO PRACTICE.

It may sometimes occur that an applicant will claim, under Section 4887, as a constructive reduction to practice, in order to overcome a reference, or for some other reason the filing of an application in a foreign country, which application has become abandoned. It would seem, under the statute, that the United States application should have the same effect as if it were filed in this country on the same date, that the foreign application was filed and the abandonment of the foreign application would be immaterial. The question of abandonment does not enter into the matter at all.

Metallurgic Co. *vs.* Whitman, C. D., 1910, p. 405.

Whitman *vs.* Hearne, C. D., 1910, p.—.

Where F. filed an application in the German Patent Office on June 23, 1905, and on October 28, 1905, an amended application was filed, accompanied by drawings, which was a complete description of the invention embraced in the issue, and was not a departure from the original application, and a complete application was filed in this country on June 19, 1906, held, that F. is entitled to the date of his amendment (October 28, 1905), as the date of his constructive reduction to practice.

Bissel *vs.* Fottinger, 212 O. G., 689, Court of Appeals, D. C.

When there is a lapse of more than twelve months between the filing dates of the domestic and foreign applications, the United States applicant can not get the benefit of the filing date of his foreign application. Muller *vs.* Lauber, C. D., 1903, p. 387.

PROOF OF FOREIGN APPLICATION.

But no benefit can be secued by the filing of a foreign application by a mere allegation to that effect. Such applications must be proved, though proof need not be given until some occasion for it arises, Ex parte Pauling, 1905, C. D., 131. Where an applicant claims the benefit of the filing of an application in a foreign country for the purpose of overcoming a reference, his affidavit, filed under the provisions of Rule 75, should be accompanied by a copy of the original foreign application, certified to by the patent Office of the country in which it was filed, and if it is not in the English language, a sworn translation, made by the official translator of *this* Office. If the application was not made by the inventor himself, applicant's affidavit should also state that the application in the foreign country was filed for his benefit, and that such a procedure is permitted in the foreign country.

Ex parte Barthels, C. D., 1912, 171.

Translations certified by a consular or diplomatic officer of the United States have always been accepted.

A divisional application takes the date of the patent application in so far as a previous foreign patent under Section 4887 is concerned.

Ex parte Scott, 1901, C. D., 42.

The same is true of an application which is a continuation of an earlier United States application, the latter being filed within the statutory period of twelve months.

Struble *vs.* Young, C. D., 1906, p. 37.

In one case, the Commissioner said that while it had never been decided by the courts whether a patent granted in this country for an invention previously made the subject of a German Gebrauchsmuster was limited by the term of the latter, the date of the Gebrauchsmuster *should be given in the specification,* the question of limitation being left to the courts.

Ex parte Gillie, C. D., 1898, p. 148.

The Board of Examiners-in-Chief has held however that a Gebrauchsmuster was a patent within the meaning of Section 4887, and that the Gebrauchsmuster application was an application for a patent within the meaning of this section.

Munster *vs.* White, Appeal No. 1021, Interference 25665.

This is contrary to the decision in Steiner *vs.* Schwarz, 148 Fed., 868. The information presented to the court in that case as to the character of a Gebrauchsmuster patent does not, however, appear to have been complete.

A foreign application fi ed before the adherence of the foreign country to the convention is of no avail under Section 4887, as a constructive reduction to practice.

Winter *vs.* Latour, C. D., 1910, p. 408.

COMPLETE APPLICATION IN THIS COUNTRY.

In Ex parte Sassin, C. D., 1906, p. 205, where the preparation, execution and filing of an application by an attorney were authorized by a power filed with the

original papers, and subsequently to the filing of the original papers, new papers were filed duplicating the original papers, except that they were executed by the inventor, and the case was thereon given a serial number and date as a complete application. Held, a request that the earlier date be given as the filing date of the application in order to avoid the bar of a foreign patent can not be granted.

The present practice seems to be as follows: Applications executed by the attorney are received at the present time and action given on the merits. Whether subsequently filed papers, executed by the inventor himself can be tied to those filed by the attorney is left for the courts of last resort to determine. Ex parte Tropenas (90 O. G., p. 749), to the contrary notwithstanding, it is believed to be a possible construction of Section 4887, that its requirements may be satisfied by the filing of applications executed by an attorney.—Letter of the Commissioner of Patents, Scientific American, Sept. 26, 1914.

IDENTITY OF INVENTION.

In considering the identity of the inventions patented in the foreign country, and covered by domestic application, recourse is had to decisions made under the old law of 1870, Section 4887, whereby the term of a United States patent for the same invention to the same inventor was limited by the term of the foreign patent, so that the United States patent expired with the latter.

The object of present Section 4887 seems to be the same as the old one, though it accomplishes its object in a different way.

In the case of the Bell Telephone Co. *vs.* Cushman, C. D., 1893, p. 546, and Circuit Court for the Northern District of Illinois said "it seems clear to me that the meaning of our own statutes is to limit the term of monopoly so that it shall exist no longer than a previously granted monopoly abroad."

In considering the other decisions, it must be remembered that Section 4886, Revised Statutes, allows a disclosure of the invention in a printed publication providing it is not prior to the date of invention nor more than

two years prior to the date of the United States application. I can see no difference in principle whether this publication be the printed specifications of a foreign patent or some other publication.

The word "patented" then in Section 4887 must mean something more than mere disclosure, and the following decisions seem to sustain the view that there must be an actual grant of monopoly rights in the invention by the foreign government, in order that the foreign patent may be a bar under this section.

In the case of Westinghouse *vs.* Stanley, 138 Fed., 823, the Circuit Court of Appeals for the First Circuit, held that the words "patented or caused to be patented" in Section 4887 refer to the invention actually covered by the claims of the foreign patent. It is not sufficient that the foreign patent disclose the invention unless it be issued in a country wherein the patents have no claims. Western Elec. Co. *vs.* Tel. Co., 106 Fed., 215 (Circuit Court, Western District of Michigan).

The description of the invention in a foreign patent might affect the validity of a domestic patent and might not, but it is only a patent for an invention that has been previously actually patented in a foreign country that is limited by the foreign patent.

Elec. Co. *vs.* Alarm Co., 22 Fed., 341.

A test to determine the identity of the inventions in the foreign patent and in the domestic patent is announced by the Circuit Court of the United States for the Southern District of New York in the case of the Accumulator Co. *vs.* Elec. Co. C. D., 1893, p. 437. This test is—"could both patents have been granted in this country?"

If any of the claims of the United States patent include any substantive part to the invention on which an independent claim might be founded, shown in a prior foreign patent, the former expired with the latter, and when the foreign patent contains no formal claims, it will be presumed that the law of the country does not require them and the specificatons and drawings will be looked into for the purpose of determining the matter of invention.

Western Elec. Co. *vs.* Tel. Co., cited.

It has been held by the Supreme Court of the United States in Leeds et al. *vs.* Victor, 1909, C. D., p. 536, that a claim for a process and a claim for an apparatus by which the process is performed are distinct inventions, and the United States patent for one does not expire under Section 4887, Revised Statutes, by reason of the expiration of a foreign patent for the other; also, that a combination of elements is an invention distinct from one of the elements thereof and a United States patent containing claims for both does not expire, as to the combination claim, by reason of the expiration of the foreign patent covering one of the elements.

If the court is convinced that it was not intended to patent the invention abroad, the court will not, by construction, broaden the language of the foreign patent so as to destroy the domestic patent when that language is capable of a construction which permitted the domestic patent to live. (Circuit Court of U. S. for Southern District of New York, Elec. Co. *vs.* Accumulator Co., C. D., 1891, p. 477.) The court said in this case, that it was not easy on principle to comprehend why a meritorious inventor who is a citizen of this republic should lose his rights at home because he has tried to protect them abroad.

A similar argument was advanced in the case of the Refrigerating Co. *vs.* Sulzberger, 157 U. S., p. 1, and the Supreme Court of the United States, answered in these words:

> "Much has been said about the intention of Congress, as manifested by its legislation, to deal liberally with inventor, especially those who were citizens of the United States. *This* is true. But it is for Congress to prescribe the conditions upon which it will secure to inventors the exclusive right to their inventions. What may be due to inventors is a matter about which there may well exist differences of opinion. It is the province of the legislative branch of the Government to say when a patent to an inventor shall expire, and, therefore when the public may enjoy, without charge, the benefit of the invention covered by it. We can very well understand how

> the existing statute may, in some circumstances, operate injuriously to an American inventor who, in addition to the exclusive rights granted to him in this country for the term of seventeen years, wishes to secure a monopoly for his invention in other countries; for, if he obtains foreign patents for his invention before obtaining one here, the American patent is limited by law, whether it is so expressed or not, in the patent itself, to expire with the foreign patent having the shortest term. This is the case as it appears from the standpoint of the patentee without regard to the interests of the American public."

But it is to be remembered—at least it may be assumed that Congress was advised—that action by the Patent Office upon applications for patents was often unduly and purposely delayed by applicants until they could reap the full benefit of the monopoly obtained by them in foreign countries before taking out an American patent. "In the meantime," the Commissioner of Patents, in his annual report, as late as 1887, said—"they (applicants for American patents) are engaged in manufacturing and putting upon the market the article or improvement, but warning the public that a patent is applied for, the effect of which is to give them absolute control and monopoly of the inveution and to deter all other inventors from entering upon the same field of invention and from manufacturing the article. . . . These considerations . . . are referred to only as showing what Congress may have had in view when it provided, as it did, that an invention covered by a foreign patent, obtained or caused to be obtained before an American patent is granted for the same invention, should be free to the American public as soon as it became by reason of the expiration of the foreign patent free to the people of other countries. If this principle operates harshly upon inventors in certain cases, it is for Congress, whose discretion is not subject to judicial control, to make provision for these cases, if it be possible to do so without such injury to the people of our country as ought not to be inflicted upon them.

According to the case of the Elec. Co. *vs.* Accumulator Co., cited, the thing patented abroad must be the same in all essential particulars as the thing patented here, and the subject of the foreign patent must, if made at home, be such as to constitute an infringement of the home patent.

In the Mfg. Co. *vs.* Canning Co., C. D., 1886, p. 409, the United States Circuit Court for the Northern District of Illinois, said that a fair test to determine whether an American patent is identical with or included in a prior foreign patent to the same inventor is to inquire whether the use of the precise process described in the foreign patent after the grant of the American patent would be enjoined as an infringement of the latter.

The infringement test is not a reliable one however, as stated by the court in the case of Westinghouse *vs.* Stanley cited. There might be infringement even though the inventions were different.

It would seem from the decisions cited, that in order to bar the grant of a patent in this country under Section 4887, the foreign patent must actually cover the same invention sought to be covered by the domestic patent, or some substantive part thereof. It would not seem sufficient that he *might* have covered it in the foreign patent. A structure made according to the foreign patent should infringe the domestic patent if the former is to be held as a bar under Section 4887. The breadth of the claims is immaterial in determining the question of identity.

If an applicant would be entitled to a patent on only one of two United States applications, one for the subject-matter of the foreign patent and the other for the subject-matter of the United States patent, then the inventions of the patents are identical.

The fact that the foreign patent covers the process and the domestic patent covers the product does not indicate conclusively that the inventions covered are different. They may be in fact the same, if the product can only be made by that process.

Accumulator Co. *vs.* Elec. Co., cited.

IDENTITY OF PATENTEES.

The opinion quoted from the case of The Refrigerator Co. *vs.* Sulzberger, indicates that, under Section 4887, the foreign patentee and the United States applicant must be the same or in privity with each other, for as a general rule no applicant is barred from receiving a patent in this country because of a prior foreign patent unless it is of a date prior to his invention or more than two years prior to the date of his application in this country.

It has been held, that if the foreign patent was not granted to the United States patentee, nor applied for with his knowledge or consent, then the expiration of the foreign patent would not cause a lapse of the United States patent.

Willcox et al., *vs.* Mfg. Co., 110 Fed. 210.
Kendrick *vs.* Emmons, C. D. 1876, p. 284.

The case of Willcox was reversed in the appellate court, but upon what grounds, I am unable to determine.

However, I think it may fairly be concluded that under the terms of Section 4887 the patentees must be the same or in privity with each other.

In the case of Metallurgic Co. *vs.* Whitman, C. D. 1910, it was held, on the evidence taken in connection with the application itself, that the presumption is justified, that under the German law, it is permissible to file an application in the name of the assignee.

MISCELLANEOUS.

In computing the time under Revised Statutes, Section 4887, as amended by the act of March 3, 1903, the day upon which the application was filed in the foreign country is excluded, and where such an application was filed on February 23, 1903, an application filed in this country February 23, 1904, was in time.

Hess-Bright Co. et al. *vs.* Roller Bearing Co., C. D. 1909, p. 266.

In conclusion, I think it would not be amiss to make the request that there be provided somewhere in this Office, copies in English, of the patent laws of all nations whose patents are received by this Office, and authoritative publications of the decisions construing these laws to the end that actions arising under Section 4886 and 4887 involving foreign patents and foreign applications may be taken with certainty.

April 1, 1915.

The Development of Fundamental Principles Involved in the Patent System and Their Relation to the Examination of Applications for Letters Patent.

A paper read September 20, 1916, before the Examining Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1916

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INTRODUCTION.

This paper is of a general elementary character, intended to be at least suggestive of a field of study which, because of its elementary character, may have been to some extent neglected and it contains reference to fundamental principles involved in the establishment of the patent system and in the grant and refusal of letters patent and some consideration of statutory provisions relating to the examination of patent applications which, it is thought, are in accord with elementary principles and fundamental law.

In this the most remarkable of all industrial ages men are studying and seeking as never before to find fundamental truths in all departments of human knowledge and effort. Men well know that the deeper and the more profound the ascertained fundamental facts and principles upon which human knowledge is based, the higher will be the character and substance of the structure and system of human attainment based thereon.

In the more limited field of law and jurisprudence, there are clear indications that men of profound thought upon the bench and in the profession of the law, are of the opinion that existing law and procedure should be revised and simplified so that legal fiction and technicality may not stand in the way to prevent the rendition of

decisions that accord with fundamental truth and simple justice.

And in a very special way the investigation of fundamental truths involved in the development of industrial progress, if applied in the work which we as judicial officers of the government are called upon to do, should, in some measure at least, result in a fairer view of the matters of substance which must be considered in determining whether products of man's creative genius shall or shall not be published to the world as patented inventions.

Moreover, it is believed that the work of examining applications for patents should be vitalized and made of more lively and absorbing interest to the examiner, and it is submitted that the thorough study of fundamental principles and the full and deliberate application of them to the examination of alleged inventions, may to some extent at least, assist in attaining this much desired end.

It is believed that before an examiner can appreciate the full importance and true significance of the judicial and technical work that he has to do, he should be thoroughly familiar with all fundamental principles involved in the grant or refusal of letters patent for inventions.

He should know whether patents are in fact monopolistic or not monopolies in restraint of trade; he should know of the educational character of the grant and its bearing upon the question of patentability; he should know of the contractual character of the grant and how it is involved in the proper attitude and point of view of the examiner in considering cases before him; he should know the true meaning of the constitutional provision upon which our patent system is based and its true relation to the character of the grant that should be issued; he should know the real meaning of the statutes, and he should know that existing statutes are absolute controlling factors in determining the practices involved in the examination of patent applications; he should know the law of evidence and how to weigh evidences of patentability or the want of it, upon the scales of evenly balanced judgment and justice alike to the inventor and to the people; and he should know that he, himself, is a very important positive factor, in probably the greatest constructive, industrial educational

system that the world has ever known, designed to create and encourage the industrial progress of the nation, and that he is not a mere negative elment standing as an obstruction to prevent the publication in patents of new discoveries and inventions that may promote the progress of the industrial arts and the consequent prosperity of the people.

NON-MONOPOLISTIC FUNDAMENTAL PRINCIPLE.

It is believed to be a matter of some importance that it should be known in the first place that the rights conferred upon true inventors by valid patents are not in and of themselves monopolies in restraint of existing trade, although letters patent, like any other form of personal property, as coal, wheat, sugar or meat, may or may not be a basis for monopoly if all or a controlling number of patents in given arts be bought up and improperly manipulated.

In order to contrast the kind of industrial grants which have been held to be monopolistic and other grants under valid letters patent which have been held to be not monopolistic, your attention is invited to the foundation decision in the case of Darcy *vs.* Allen, Kings Bench, 1602, in which it was sought to enforce a grant of the exclusive right to import and sell playing cards within the realm.

In this case it was decided upon demurrer that the grant was *void* because against the existing rights of the people, and that it was a monopoly under the common law, the court holding that:

> "There are three inseparable incidents of every monopoly against the commonwealth, (1st) that the price of the commodity will be raised, for he who has the sole selling of any commodity may and will make the price as he pleases; (2nd) that after the monopoly is granted, the commodity is not so good and merchantable as it was before, for the patentee having the sole trade regards only his private benefit and not that of the commonwealth, and (3rd) that it tends to the impoverishment of divers artificers and others who

> before the grant, by the labor of their hands in their arts or trade, had maintained themselves and their families, but who now will of necessity be restrained to live in idleness and beggary."

Following this decision the same question came up in the well-known Clothworkers of Ipswich case Kings Bench (1615), and in this case it was held that the grant by the Crown of the exclusive right to work in the tailors' trade in the town of Ipswich was void as being a monopoly against the existing rights of the people who, it is held, "have the free and common right to work in any existing trade as the birthright of every subject."

However, in this same decision it was stated:

> "But if a man hath brought in a new invention or if a man hath made *a new discovery of anything*—in such cases the King of his grace and favor, in recompense of his costs and travail, may grant by charter unto him that he shall use such a trade or traffic for a certain time, because at first the people are ignorant and have not knowledge or skill to use it; but when that patent is expired the King can not make a new grant thereof, for when the trade has become common and others have been bound as apprentices in the same trade, there is no reason why such should be forbidden to use it."

This decision may properly be termed, it is thought, about the first to sharply distinguish between those grants of industrial privileges conferred by the Government in derogation of the prior existing rights of the people and commonly called monopolies and those other grants to men for limited times of rights to the exclusive ownership of the products of their own genius for invention and discovery, which are not grants in derogation of prior existing rights of the people, but, on the contrary, create new forms of property for the education and benefit of the whole people for all time.

Following this decision the Statute of Monopolies, enacted in 1624, especially excepted from its provisions the grants to inventors of the exclusive ownership of

their inventions for a limited time and thereby legally established in England the non-monopolistic character of the grant.

In this connection your attention is invited to a decision rendered more than two hundred years later by Justice McLean in the case of Parker *vs.* Haworth, 4 McLean, 370, in which he said:

> "The policy of the law which protects inventors is wise. It stimulates genius by endeavoring to secure a reasonable compensation to those who have spent their time and money in producing something of utility to the public. *It is not a monopoly the inventor receives.* Instead of taking anything from the public, he confers on it the greatest benefits; and all he asks and all he receives is that for a few years he shall realize some advantage from his own creation; not that he withholds his machine or discovery from the country, but that in distributing it he may receive a small compensation for the great benefit he confers. The triumphs of the inventor are intellectual triumphs. His demonstrations are made through mechanical agencies, but these in the highest degree are attributable to mind; and the same may be said of useful inventive mechanics generally. The usage of their thought embraces the system of natural philosophy in all its practical bearings; and, in carrying out their views, the highest degree of mechanical ingenuity. Through the labors of these men our country has been advanced by machinery on the land and on the water; in the saving of labor and in a rapid and increasing intercourse, and especially in the communication of intelligence in the last forty years more than could have been hoped for without their instrumentality, in many centuries."

FUNDAMENTAL EDUCATIONAL PRINCIPLE.

Besides bringing out the distinction between void grants of monopolies in restraint of trade and valid grants in letters patent for invention, this foundation decision

in the Clothworkers case indicates the fundamental reason why grants of letters patent should be issued, as shown in the following statement:

> "because at first the people of the Kingdom are *ignorant* and have not the *knowledge* or *skill* to use it."

Thus the education of the people in the practice of new and useful inventions, by the patented disclosures of inventors, is shown to lie at the very foundation of the patent system and to constitute the real reason for its establishment.

And although the fundamental object of the establishment of the patent system was to *educate the people* in the practice of new inventions and thereby to promote industrial progress and prosperity, and although the patent system has developed into an enormous industrial educational system in which should be interested every person, firm or corporation that may make, use, or sell manufactured commodities, it is probable that there is greater elementary ignorance among the people in relation to this great system than about almost any other important subject. And this leads to the conclusion that the people generally should be educated, in an elementary way at least, about the provisions of this system which was established in their interest.

FUNDAMENTAL PRINCIPLE INVOLVING ANTICIPATION.

Referring again to the Clothworkers' case it will be seen that it contains also the first indication of the fundamental principle involved in the question of anticipation and the refusal of letters patent as shown by the following statement:

> "But when that patent is expired the King can not make a new grant thereof, for when the trade has become common and others have been bound as apprentices in the same trade, there is no reason why such should be forbidden to use it."

Thus it will be seen that not only is the education of the people in the practice of the new and useful inventions the fundamental object of the establishment of the patent system and the reason for the grant of letters patent, but the fact that the people have already been educated to practice alleged inventions is the fundamental reason for the refusal of grants therefor.

FUNDAMENTAL CONTRACTUAL PRINCIPLE.

This early decision also brings out to distinct view the first conception of the contractual character of the grant, for therein it is stated that it would be lawful to issue such a grant because it would be "in recompense for the costs and travail" of the inventor. And two hundred and seventeen years later, in the familiar case of Grant *vs.* Raymond, Chief Justice Marshall said:

> "To secure to inventors the exclusive rights to their discoveries is the reward stipulated for advantages derived by the public for the exertions of individuals and is intended as a stimulus to those exertions" and "The laws which are passed to give effect to this purpose ought to be considered in the light in which they have been made and to execute the *contract* fairly on the part of the United States where the benefit has been received."

SOME OTHER FUNDAMENTAL DECISIONS.

In the interval of time between the enactment of the Statute of Monopolies in 1624 and the adoption of the Constitution of the United States, there were several recorded decisions in patent cases in England which contain some of the fundamentals upon which our own patent system was established and among these decisions may be briefly mentioned the following:

(1) Edgeberry *vs.* Stevens (K. B:, 1691) containing reference in a rudimentary way to the later provision of law that prior knowledge abroad of an invention will not defeat the grant of a domestic patent for the same invention.

(2) Dolland Case (C. Pleas, 1766) in which prior secret use of an invention in England, by which the public could not have been taught to practice the invention, was held not to invalidate a patent to another for the same invention, because the later inventor and patentee and not the earlier secret inventor was the means by which the invention was made known to the public.

(3) Roebuck *vs.* Stirling (House of Lords, 1774) in which prior public use of the invention in England was held to invalidate a later patent to another for the same invention.

(4) Arkwright *vs.* Nightingale (Com. Pleas, 1775) in which it was held that—

> "the specification is addressed to persons in the profession having skill in the subject, not to men of ignorance, and if it is understood by those whose business leads them to be conversant in such subjects, it is a sufficient specification under the law."

(5) Liardet *vs.* Johnson (K. B., 1778) in which a patent was declared void because the specification did not constitute a complete description of the invention, the court holding that—

> "the meaning of the specification is that others may be taught to do the thing for which the patent is granted and if the specification be false, the patent is void, for the meaning of the specification is that after the term, the people shall have the benefit of the discovery."

These decisions, it is thought, indicate the first evidences of a system of fundamental laws involving patents at the dawn of the modern industrial era, in that, even at that early date across the seas, there were distinct indications of the industrial value to the people that resulted from granting to inventors the exclusive ownership of their inventions for limited times as a consideration for the publication thereof in the interest of the people and to educate them in the establishment and practice of new arts and industries.

FUNDAMENTAL CONSTITUTIONAL PRINCIPLE.

It was probably with these facts in mind and having in mind also that the newly formed Union of States could not progress industrially without new means for solving the new industrial problems that lay before them, that Mr. James Madison on August 18, 1787, presented for the consideration of the committee of eleven of the constitutional convention, a memorandum of the several powers which he thought should be conferred upon Congress.

This memorandum contained the following two separate paragraphs:

> (1) "Congress shall have power to secure to literary authors their copyrights for a limited time" and
>
> (2) "Congress shall have power to encourage by premiums and provisions the advancement of useful *knowledge* and discoveries."

It will thus be seen that the fundamental conception in this country that is involved in the establishment of a system of industrial development is shown to have involved primarily the advancement and dissemination of *knowledge* of new discoveries and inventions and this conception of the educational character of such a system is clearly consistent with that earlier conception at first referred to in the Clothworkers case one hundred and seventy-two years prior thereto.

In the final form in which this matter was presented to the constitutional convention by the committee of eleven on September 5, 1787, the two separate paragraphs above referred to were combined into one and in the words so familiar to you all, it was adopted unanimously and without debate.

And sitting, as those men were in convention assembled, to invent and establish a new form of government consisting of the combination of executive, legislative and judicial elements which have cooperated to produce a new result in governmental machinery such as the world had not known before, it was but natural that they should have laid this foundation for the great industrial progress of this nation.

In plain and unmistakable terms, the constitutional provision tells the purpose and object of the establishment of the patent system in the words, "To promote the progress of science and the useful arts," and in so far as the writer has been able to discover, this is the only paragraph of the constitution which in terms provides for the promotion of industrial progress in the interest of the people.

As the phrase quoted clearly indicates the purpose and object of the establishment of the patent system, so also the only *means* provided by the constitution to be employed to carry that purpose and object into effect, is found in the words "by *securing* for limited times to inventors the exclusive rights to their discoveries."

It was to the ingenuity of the American inventors, then, that the founders of the Government looked to establish industrial enterprise and the fact that this nation today stands second to none in general industrial importance, is proof of the accuracy of the prophetic vision of those who placed the foundations of American material progress upon the shoulders of men who have been and are endowed with the power of original thought and the courage of original action.

GENERAL OBSERVATIONS AS TO FUNDAMENTALS CONSIDERED.

With these general considerations in view with regard to the historical development of the educational, contractual and constitutional characters of the grant, it may be assumed that the first and most fundamental test to be applied to the examination of alleged inventions in patent applications is this: Would the subject-matter if patented or published educate the people to practice a new or improved industrial art or construct a new or improved industrial instrumentality.

A favorable opinion of this question should be very helpful to the examiner in deciding doubtful legal and technical problems in favor of the applicant.

Viewed also from the standpoint of their educational character, patents should be granted in the interest of the people in all cases except where evidences of prior public knowledge of the alleged invention make it clear

that those of ordinary skill in the arts are, constructively at least, already in possession of that knowledge and, in view of the fact that it is in the interest of the public that they should without delay obtain this instruction, it is a matter of much consideration that patents be expeditiously granted, due regard being had, however, to thoroughness of the examination which eventuates in the final refusal or grant of the patent.

Viewed from the standpoint of the contractual character of the grant, patents should be granted in all cases where the consideration offered by the applicant in the character of the disclosure of the inventive subject-matter would be "sufficiently useful and important" (R. S. 4893) to the public and would constitute an adequate consideration for the rights conferred by the public upon the inventor in the character of the exclusive ownership of the right thereto. The contract should be fair in its terms equally to the inventor and to the public, and for this reason, the examiner should learn to study each case before him both from the standpoint of the inventor and from the standpoint of the public. In this way only will the examiner acquire such an unprejudiced, judicial attitude as is essential to the rendition of fair and impartial decisions in matters relating to patentability.

It may be helpful to the examiner to view the application as having an inter-partes character and as if it were an executory contract and to consider that he sits as a judge to determine from all the facts and the law involved, what the terms of that contract shall be when executed; remembering full well that if the terms of the contract are to be fair, the scope and character of the claims allowed should be in direct correspondence with the extent to which the people will have been instructed by the disclosure.

In the earlier ages of the patent system, some examiners held that they represented the people only and that it was their duty in the interest of the people to prevent the allowance of patents to inventors. A deeper study of fundamental principles, however, now reveals a fairer and better conception of the examiner's duty, a conception that is helpful to the examiner in that it cultivates the habit of evenly balanced judgment and

relieves him of the monotonous strain of one-sided effort, a conception that lubricates the machinery of legal and technical labor and that results in fairness and fundamental justice alike to the people and to the inventor. This conception is—that the examiner as a judicial officer of the government of the people, represents equally the interests of the people on one hand and those of the inventors, who are of the people, on the other. And then, this judicial character of the examiner's work in considering the rights of inventors as well as the rights of the people in cases before him, if pursued with an open, fair mind, will more eminently qualify him for the more remunerative but less important work of the patent solicitor and lawyer, or the more responsible but less remunerative work of the Primary Examiner, Examiner-in-Chief or Commissioner of Patents.

Viewed from the standpoint of the constitutional provision, patents should not be granted except in those cases where the arts and sciences may be promoted thereby and only in those cases in which inventors may be made *secure* in the *exclusive* rights to their inventions. It constitutes an obvious violation of the constitution to grant patents for alleged inventions which do not promote the progress of the useful arts, which do not make the inventor *secure* in his rights and which do not confer upon the inventor the *exclusive* right to his invention. In this connection it should be borne in mind that inventors may not be made secure in the exclusive right to their inventions if the claims granted be so broad or so improperly drawn as to be invalid in view of the prior art, or if the claims patented contain useless or unrelated limitations in addition to a fair definition of the real invention. This indicates the fundamental importance of mature and earnest endeavor to make thorough searches to find statutory bars if they exist and to so act upon applications as to eliminate from claims limitations that may be unnecessary and unrelated to the real invention.

ESSENTIALS IN THE APPLICATION OF FUNDAMENTAL PRINCIPLES.

Having now taken the liberty of inviting your attention generally to the non-monopolistic character, the educational character and the contractual character of the patent grant and to the constitutional provision relating thereto, it may be found of some little interest to consider some of the essentials that should be involved in the work of the examiner if applications are to be examined and patents granted in accordance with fundamental principles and fundamental law.

First, therefore, it would seem to be essential that the examiner should clearly appreciate the difficulty, dignity and importance of the work before him and the serious responsibility of deciding questions that may involve the material progress and prosperity of the nation and the failures or fortunes of men. Prominent jurists have expressed the opinion that the preparation and consideration of applications for letters patent involve the consideration of some of the most difficult legal and technical problems and that they themselves have ascertained from the judicial consideration of cases before them that the patent law constitutes what may be termed *the metaphysics of the law*. If this be the opinion of the justices of our Federal courts who, while maturely deliberating upon the questions at issue, are aided in rendering their decisions by the opinions of experts, by practical demonstrations, by the fullest possible presentation of facts bearing upon the question of validity both from the standpoint of the people and from the standpoint of the patentee, and by exhaustive briefs disclosing the law and the facts as presented by well qualified lawyers; if this judicial work under these helpful and favorable conditions be considered most difficult and metaphysical, then surely the work of the examiner, who must often be his own legal and technical expert, who must search and produce evidences of invalidity as well as legal precedent for his own judicial decisions, who is often without the assistance of proper disclosure and practical evidences of patentability and without sufficient time and facilities to permit proper consideration of the serious questions presented—surely such combined legal, technical and judicial work may properly be

termed still more difficult than that of the jurist and may justly be termed the super-metaphysics of the law.

Having been thus impressed with the serious importance of the work before him the examiner should realize that there is no easy or superficial process of properly examining applications, and that the interests of the people and the interests of inventors alike demand the mature and thoughtful examination of all subjects matter presented, and full and fair consideration of all legal questions before him.

Secondly, Matters of Substance and Matters of Form.

If applications are to be granted in accordance with fundamental principles and fundamental law, the mind of the examiner should be trained and directed to an important consideration of all matters of substance and to relegate to a secondary position matters of form.

In order that the relative values of these questions may be gauged with some degree of accuracy, it must be determined in the first place what generally are matters of form and what generally are matters of substance.

The conclusion as to this question seems necessarily, under the law, to be that all matters that would affect the validity or the scope of the patent when granted may be considered matters of substance, and all matters which, according to statute and court precedent, have been considered *not* to affect the question of validity or scope of the patent may be considered matters of form.

If these holdings be accepted, it follows that matters of substance must be of material and controlling importance, and matters of form must be of secondary importance.

So far as the statutes are concerned it does not appear that they give prominence to any formal matter within the scope of the examiner's work, and in view of the fact that a court will presume that all such formal requirements have been complied with even where from the patent file it does not appear positively that such requirements were in fact complied with, the small, relative value of mere formal matters may be clearly seen.

However, it appears that in office practice and apparently without basis in fundamental law, there has developed some phases of the so-called question of "form" that should be considered. This is especially true of what have been termed claims "bad in form."

In so far as known neither does the statute nor does any controlling foundation decision prescribe any form for any claim.

Claims that have expressed elements in the alternative have been considered "bad in form" as likewise have claims which have been held to be ambiguous, and such claims as are indefinite and such as may not define sufficient elements to support functional expressions. Yet the only fundamental legal requirement as to claims is that they shall "particularly point out and distinctly claim the part, improvement or combination" which applicant claims to be his invention. (Revised Statutes 4888.)

The writer can see no fundamental distinction in general character between claims which in the past have been objected to because bad in form and other claims which have been rejected because indefinite, and it is submitted that it would be conducive to a more expeditious consideration of applications if both the claims hitherto held bad in form and those hitherto held indefinite or functional were grouped together and all rejected because not drawn in compliance with the provision of the statute.

Thirdly, Complete Disclosure of Alleged Invention and of All Matters of Fact Supporting Patentability.

If applications are to be examined and patents granted in accordance with the educational, contractual and constitutional requirements, it is submitted that before, and as a condition precedent to the first consideration and examination thereof, there should be not only a full and fair disclosure of the alleged invention, which disclosure should be so clear and exact as to enable any one skilled in the art without further experimentation and without the exercise of higher than ordinary skill to produce the invention and practice the same, but also as a condition precedent to the first consideration of a case there should

be a full presentation of facts and matters of truth substantiating the patentability of the alleged invention presented just as it is a condition precedent to a *reconsideration* of an application that facts and reasons supporting patentability be presented. The writer is not unmindful of the difficulties experienced by solicitors in extracting from their clients all matters of fact relating to the substance of the invention, but this condition does not alter the fact that frequently the examiner, whether through ignorance or preconceived design of the applicant, has only the skeleton of the alleged invention to consider and examine, while the meat and the spirit of the invention are withheld from his consideration.

The consideration of applications has shown that only after a threat of final rejection, or after five or more years of prosecution of cases, have the real facts as evidence substantiating patentability been revealed to the examiner, whereas if these facts had been presented to the examiner in advance of his first consideration of the cases, it is probable that but one or two actions in these cases would have been necessary. What new result the alleged invention actually accomplishes in the art, whether the invention is practical or not, whether the invention accomplishes in fact the new results claimed therefor as indicated by a practical working of the invented subject-matter, and whether it does in fact promote science and the useful arts, are all material factors often already within the knowledge of the applicants and their attorneys at the time of filing applications, and it is submitted that as an essential condition precedent to a full first examination of applications, such matters of fact should be presented to the examiner in proper form as evidence along with the application when filed.

It is a known fact that upon appeals to the Board of Examiners-in-Chief fuller disclosures of facts bearing upon the question of patentability are presented than had been presented for the consideration of the examiner, and the longer the course of appeal the fuller the disclosure of these pertinent facts, and finally when, after the patent has been granted litigation ensues, then, may be, for the first time all the real reasons substantiating

validity that can be marshalled by the plaintiff are presented for the consideration of the court.

Besides the fact that both a disclosure of the alleged invention in such full, clear and exact terms as to enable those of ordinary skill in the art to practice the invention, and also a full presentation of facts as evidence substantiating patentability are essential to a full first consideration of an application by the examiner in accordance with fundamental principle, it seems clear that the public who permit the grant of patents and who are mainly interested and benefited by the grant of the patent should be advised of all facts bearing upon the matter of patentability, and these facts should be made a matter of record in each case whether they be presented before the first examination by the examiner or in response to official actions. There is no place in the proper prosecution and examination of cases for the allowance of claims in view of mere oral interviews, or in view of any reasons not of record of which the people may not be informed. See ex parte Eckbo, 116 M.S. Dec., 60.

In the case of every judicial tribunal known to the writer, excepting the examiners of patents themselves, the trial judge has all attainable affirmative and negative evidence before him *before* he renders his first decision, and no reason is seen why the examiners should be made an exception to this well established general rule.

Fourthly, Examination of the Alleged Invention. (Rev. Stat. 4893.)

If patents are to be granted with due regard to the rights of inventors as well as the rights of the people and in harmony with constitutional provisions, it is essential that a full and complete examination of applications such as is contemplated by Revised Statute 4893 be made. This examination should include not only a mature and critical reading and study of the specification and claims, and also drawings, if there be drawings, to determine whether the disclosure is as full, clear and exact as the statute (4888) requires, and to determine whether the matter as disclosed is operative or may lack utility, but the examination should also include *a fair*

search for patentable subject-matter in the disclosure as well as a full and complete search for references and other statutory bars, not only to the claimed subject-matter, but also to the disclosed subject-matter upon which the claims may be based, thereby forestalling the common practice of solicitors of shifting from one claimed subject-matter to another within the attainable prior art.

Were it true that claims presented in applications always are directed to the patentable subject-matter disclosed therein, the practice of searching for and examining only the matter claimed would obviously be the proper practice, but it is a conservatively stated fact in a fair proportion of applications presented, that the claims drawn are not directed to the patentable matter that may be disclosed in the specification and drawing. To substantiate the view that the whole application should be examined with a view to ascertaining what is the real essence and scope of the invention, if any therein, your attention is invited to Revised Statutes 4893 which provides that:

> "On filing of any such application and the payment of the fees required by law, the Commissioner of Patents shall cause an examination to be made of *the alleged new invention or discovery;* and if on such examination it shall appear that the claimant is justly entitled to a patent under the law, and that the same is *sufficiently useful and important,* the Commissioner shall issue a patent therefor."

From a fair interpretation of this statute it would appear, it is thought, that not only the claims, but the subject-matter upon which the claims are based and all allegations in the specification should be examined and considered with a view to ascertaining what is the real invention, if any, and it is to be noted that this provision is mandatory and not discretionary.

In this connection it appears to be contrary to a plain rule of reason that the word "examination" in Revised Statutes 4893 be given any peculiar, unusual or hypertechnical meaning.

In every other line of work wherein analysis, diagnosis,

examination or judicial determination may be involved, the matter considered is generally subjected to thorough investigation from all points of view. In all such cases, not merely one-sided statements or claims as to the matter under consideration, but the result of the investigation itself, determines the exact character of the matter being examined. Accordingly it is submitted that applications for letters patent should be subjected to such analysis and investigation as generally are all other kinds of work subject to investigation and analytical research.

In further support of the view that, under Revised Statutes 4893, a proper examination of an application should be directed to finding out what is the real invention disclosed therein in view of the prior art, your attention is invited to Vol. 1, page 155, Robinson on Patents, in which it is stated that:

> "*The claim is to define what the Patent Office, after due examination, has ascertained to be the real discovery of the inventor,* and it must be amended or withdrawn according to the judgment of the officers to whom this duty is committed."

In still further support of the view that the proper examination of an application should extend through and beyond the claim made to the "alleged invention," to the real invention, if any, that may be disclosed, attention may be directed to the fact that there are clear indications that judges of the Federal courts, who are best grounded in fundamental patent law, are looking beyond the claims in suit, through mere "environments," to the real essence of the invention made and, where the terms of the claims make it possible, are construing patented claims so as to give them the scope and meaning necessary to cover the real invention made by the patentee. In this connection see the very able decision recently rendered by Judge Dennison in the case of Davis Sewing Machine Co. *vs.* New Departure Manufacturing Co., 212 O. G., 1057.

And if it becomes thus necessary for the courts to construe claims and go beyond them to find the real invention in order that the patentee may be given protection for that which he really has invented, it would

appear all the more important for the examiner to so examine applications as to ascertain what the real invention is and what are needless limitations, before the patent is granted, in order that the patent when issued may show upon its face what the real invention is and in order that this legal construction of the patent through and beyond the terms of improperly granted claims may be made unnecessary.

Aside from these considerations, if searches be made through and beyond the claim presented it may result in finding matter disclosed that would be of value to the public and which may form the subject-matter of patentable claims, but which would not have been found and claimed if the claims alone as drawn by applicant or solicitor had been examined, and if no search beyond the claim had been made for patentable matter.

It would appear to be quite clear, therefore, that only by a thorough search for patentable matter in applications as well as for statutory bars to the granting of patents will the grant be fair in its contractual terms and will it be made in accordance with the constitutional provision; and, moreover, this full first examination of matter in and beyond the claims would doubtless render subsequent searches largely unnecessary and would necessarily expedite the final disposition of applications.

Fifthly, Information in the Interest of Inventors and References in the Interest of the People Including Inventors (Rev. Stat. 4903).

If patents are to be granted in accordance with fundamental law, and also with fair regard to the interests of the two real parties to the contract, it is submitted that after examinations have been made of applications in accordance with an interpretation of the meaning of the Revised Statutes 4893 that is in harmony with the fundamental principles that have been referred to at length, official decisions rendered as the result of such an examination should be made in accordance with such an interpretation of Revised Statutes 4903 as will be in harmony with the contractual and constitutional principles involved.

Revised Statutes 4903 provides:

> "Whenever, on examination, any claim for a patent is rejected, the Commissioner shall notify the applicant thereof, giving him briefly the reasons for such rejection, together with such *information* and references as may be useful in judging of the propriety of renewing his application or of altering his specification; and if, after receiving such notice, the applicant persists in his claim for a patent, with or without altering his specification, the Commissioner shall order a re-examination of the case."

It is to be noted that this statute contains a mandatory provision to the effect that *information* as well as references shall be furnished to applicants, and it is submitted that this information should be such as to aid in determining the true scope of the real invention disclosed in order that claims may be presented that may make the inventor secure in the exclusive right to his invention.

The term "references" doubtless applies to all matters of fact constituting, under the statute, evidences of want of novelty and also references to all matters of law and fact constituting evidences of lack of invention under the statute.

And since such references to matters of facts and law under the statute are to be cited in official decisions in the interest of the people to prevent the granting of patents that invade the existing rights of the people, and in order that the people as well as inventors may not be deceived by the grant of inoperative or invalid patents, it would seem only fair and reasonable to assume that "information" under the statute should be given in official decisions both as to matters of fact and matters of law that will aid applicants in securing patents that will conform to the elmentary principles involved in the contractual and constitutional characters of the grant.

SOME APPLICATIONS OF ELEMENTARY PRINCIPLES.

It may now be of some little interest to apply, in a simple way, the elementary and fundamental principles to which reference has been made, to some familiar

cases that frequently come before the examiner for consideration.

(1) Let us consider a case involving mill construction in which upon a thorough examination of the alleged invention as required by the statute the examiner finds that the claims for a crushing roll *per se* as presented are anticipated by the prior art, but upon search for patentable subject-matter finds a new and patentable invention disclosed in the relation that one crushing roll bears to another crushing roll. It is submitted that it is in accordance with fundamental requirements involved in the educational, contractual and constitutional character of the instrument under consideration and in accordance with a fair interpretation of Revised Statutes 4903 in harmony with these fundamental principles that information be given to the applicant of this patentable matter in order that it may be published in a patent to instruct and educate the people.

(2) Let us now consider another case involving the alleged combination of a grinding element having a new grinding dress with a new means of fastening the element upon its shaft. This claim may be patentable in so far as the prior art is concerned and it may be in the selfish interest of the people as one party to the contract that such a restricted claim be allowed. But the interests of the inventor are of equal weight and value with those of the people and viewed from the inventor's standpoint, such a claim should not be allowed, because it does not make the inventor secure in the exclusive right to what he has really invented and because the contract would not be fair in its terms to the inventor if granted for this subject-matter. It is submitted that in such a case as this the claim should be rejected for want of patentable combination between the grinding element with its particular dress on one hand and the particular means of fastening the element to the shaft on the other, and in accordance with the provisions of Revised Statutes 4903 applicant should be informed that separate claims, some to the grinding element with its dress and others to the means of fastening the element to its shaft may be allowed and that it is a useless limitation to claim such features in combination. It is submitted that there is just as much warrant in fundamental law for the refusal

of claims which by reason of unnecessary and unrelated limitations (whether they be new or old), may make inventors insecure and unexclusive in their rights, as there is for the refusal of claims which would deceive the public and be worthless to inventors, because invalid in view of the prior art.

(3) Let us consider a case for mill construction in which the claims for a crushing roll having a special crushing dress and made, say, of manganese steel, are found to be patentable in view of the prior art, but upon a thorough examination of the alleged invention the examiner ascertains that the claims contain useless limitations by reason of the needless restriction as to the material of which the roll is made. The examiner knows the fundamental principles involved in the contractual character of the grant in that the claims granted should be commensurate in scope and character with the scope and character of the disclosure made in the interest of the public, and the examiner knows that the presence of useless limitations in these claims may prevent the inventor from being made secure in the exclusive right to the real invention (the roll provided with the crushing dress) covered thereby as provided by the constitution, and accordingly in order that the patent may be granted in accordance with the provisions of fundamental law it is submitted that under the provisions of Revised Statutes 4903 the applicant should be given this information which has been acquired by the examiner, and he should point out to the applicant the true scope of his invention and what are the useless limitations in his claims.

(4) A case for, say, a grain thrashing mechanism is now considered in which is presented claims for alleged combinations of distinct and separate subjects-matter, for instance, the feeder and the cylinder threshing mechanism. The examiner in examining this case finds that the combination broadly is old and that each element is old as claimed. Both from his own study of the law relating to patentable combination and from a careful study of the very able but conflicting opinions expressed in papers read by examiners during the past year, the examiner has a very clear conception of the law relating to the patentability of combinations of old

devices. He therefore cites references to show that the combination claimed is old and that the separate devices are old and rejects the claims for want of invention in assembling the old devices in one structure, if no new relation or result appear to the examiner. However, in order that the decision of the examiner may be in conformity with the elmentary principles referred to and comply with a fair interpretation of Revised Statutes 4903, it is submitted that the applicant should be given information as to the law points involved, to the effect that the rejection is made in the absence of evidence of patentable combination among the parts indicating the production of a new or improved result, the production of an old result in a better way or in the absence of a showing that one or more of the parts are caused to operate differently in the alleged combination than it or they did before in their separate capacities; and as indicating what is meant by a "new result" under the law, it is suggested that the decision in the case of Deere & Co. *vs.* Rock Island Plow Co., 82 O. G., 1561, be studied. In this case the judge said:

> "The new result of a patentable combination is a result which is new and distinguishable as compared with results produced by the elements in their separated state or as assembled in a mere aggregation without functional relations to each other. A combination is not unpatentable merely because its results may also have been accomplished by other combinations."

If, in searching for patentable matter, however, in the above noted case it appears from the disclosure that, for instance, there is a new relation of the feeder to the thresher in that the material is so fed and controlled by the feeder as to prevent choking the thresher cylinder, it is submitted that information as to the matter should be given under the statute.

(5) Another case involving mill construction may now be considered in which a thorough examination under Revised Statutes 4893 discloses the fact that the claims define a new and distinct subject-matter patentable in itself in view of the prior art, in the character of new grinding mechanism *per se*, in alleged combination with

feed mechanism, screens, and discharge mechanism which, together with the grinding mechanism, constitute the whole machine.

In such a case as this, it is submitted, references should be cited to show that the general combination is old; that therefore the people need no further instruction as to how such devices should be combined and such claims should be rejected because it is shown that applicant did not invent the combination, but he should be informed that he did invent the crushing mechanism *per se*.

There are several reasons why such claims as this, whether they be the only class of claims in the case, or are claims needlessly drawn in addition to other claims which properly define the real invention in view of the prior art, should not be presented or granted, some of which reasons are the following:

(1) Because, if such claims be presented for examination they complicate the work of the examiner by requiring searches for and examination of a plurality of distinct and often unrelated inventive subjects-matter in each claim and thus materially prolong the examination and prosecution of applications in this office.

(2) Because, if granted, such grant would be violative of the basic principle involved in the educational character of the grant in that the public having been once educated to make such combinations there is no reason or warrant in fundamental law for granting a subsequent patent to again educate the people to combine such devices.

(3) Because such claims are violative of the contractual agreement of the applicant to comply with the terms of the statute (4888) which provides that:

> "Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall . . . particularly point out and distincly claim the part or improvement . . . which he claims as his invention or discovery."

(4) Because such claims in patents are violative of the contractual character of the grant, in that they do not define the real invention in terms coextensive with a less limited inventive subject-matter disclosed and in

that being thus unduly limited they constitute invitations to the patent expert freely to extract the essence of the real invention and conceal it in other material embodiments thereof.

(5) Because such claims in patents are violative of the constitutional provision in that they may not make inventors secure in the exclusive rights to their real inventions.

(6) Because such claims in patents have confused the minds of the trial justices and have led to many inconsistent and conflicting decisions in the various judicial circuits.

(7) Because such claims in patents make more difficult the task of the highest and best type of legal practitioner, who in more modern times, in the interest of their clients, seek to prevent litigation where possible, whereas, such claims constitute an obvious means of promoting prolonged entangling litigation so harmful alike to the public and to inventors.

(8) Because such claims if granted in patents may deceive the public in the belief that the patentee had invented the whole defined subject-matter; and in this connection your attention is invited to the foundation decision in the case of Evans *vs.* Eaton, 7 Wheaton, 356. In this case the plaintiff brought suit upon a patent for hopper-boy construction in a mill. The claim in this case covered inferentially, at least, the whole of the hopper-boy construction though the plaintiff had in fact made merely an improvement upon prior general machines. The plaintiff held that his patent was to be construed for either the whole machine or, if not susceptible of this construction, it should be construed as being for an improvement. So, thus early in the judicial consideration of patents we find the court confronted with one of the now familiar claims in the character of a nose of wax in which the real invention is so obscured in "environments" or additional matter as to permit the plaintiff to conceal his real invention and then, if his patent be litigated, he may seek to have it construed in one way to suit one condition, or in another way to suit another condition.

Justice Story, the famous patent jurist of the early days of the patent system, in deciding this case after

referring to the claim drawn as having "a double aspect" said:

> "The very terms of the patent, as they have been already considered, and as they have been construed at the bar by the plaintiff's counsel, at the present argument, seem almost conclusively to establish that the patent is for the whole machine, that is, for the whole of the improved hopper-boy, and not for a mere improvement upon the old hopper-boy.
>
> "It is clear that the party can not entitle himself to a patent for more than his own invention; and if his patent includes things before known, or before in use, as his invention, he is not entitled to recover, for his patent is broader than his invention. If, therefore, the patent be for the whole of a machine, the party can maintain a title to it only by establishing that it is substantially new in its structure and mode of operation. If the same combinations existed before in machines of the same nature, up to a certain point, and the party's invention consists in adding some new machinery, or some improved mode of operation, to the old, the patent should be limited to such improvement, for if it includes the whole machinery, it includes more than his invention, and therefore can not be supported.
>
> "The specification has two objects: one is to make known the manner of constructing the machine (if the invention is of a machine), so as to enable artisans to make and use it, and thus to give the public the benefit of the discovery after the expiration of the patent. It is not pretended that the plaintiff's patent is not in this respect sufficiently exact and minute in the description. But whether it be so or not, is not material to the present inquiry. The other object of the specification is, to put the public in possession of what the party claims as his own invention, so as to ascertain if he claims anything that is in common use, or is already known, and to guard against prejudice or injury from the use of an invention which the party may otherwise

innocently suppose not to be patented. It is, therefore, for the purpose of warning an innocent purchaser, or other person using a machine, of his infringement of the patent, and at the same time of taking from the inventor the means of practicing upon the credulity or the fears of other persons, by pretending that his invention is more than what it really is, or different from its ostensible objects, that the patentee is required to distinguish his invention in his specification. How can that be a sufficient specification of an improvement in a machine which does not distinguish what the improvement is, nor state in what it consists, nor how far the invention extends—which describes the machine fully and accurately as a whole, mixing up the new and old, but does not in the slightest degree explain what is the nature or limit of the improvement which the party claims as his own? It seems to us perfectly clear that such a specification is indispensable, and we are of opinion that the inventor ought to describe what his own improve- is, and to limit his patent to such improvement."

The concealment of the real invention in alleged combination claims, whether through ignorance or by design, constitutes at the present time, as it did in 1822, one of the most serious abuses existing in patent practice, and unless the allowance of such claims be discontinued, it will constitute one of the most potent causes in impairing the usefulness of the patent system. These views in relation to the inclusion of useless limitation in claims containing patentable subject-matter are not only those of the best informed of the jurists of the early period of the patent system, but are also those of a thorough student of patent law upon the Federal bench and of two of the foremost patent lawyers of today, as have been evidenced by addresses made by them before this body of men, and the fact that examiners have been deciding cases for some years in accordance with these fundamental principles in order that patents granted by them may make inventors secure in the exclusive right

to their inventions, constitutes conclusive evidence that the opinions of Justice Story and those of the able gentlemen who have appeared before us are absolutely correct.

It is submitted that in decisions by the examiners in such cases as this, references showing the general combination should be cited, references to the fundamental law should be cited, and "information" under the statute should also be given to the applicant to show that his real invention may consist in the distinct inventive subject-matter that is original with himself and not in the alleged combination and, moreover, that it is a needless limitation to claim other matter in alleged combination with the real inventive subject-matter.

This does not mean that in all cases where novel inventive subject-matter of a distinct character is claimed with other matter, the claim should be rejected for reasons above stated. In many cases the novel subject-matter is in such relation with the other matter as to cause it to operate differently than it did before, and this may be termed a patentable combination of a new subject-matter and other devices. In such cases if claims for the patentable combination only be presented, it is submitted that, in the interest of the inventor he should be informed that claims for the patentable improvement *per se*, as well as for the patentable combination including the same may be allowed, for only in this way may the contractual and constitutional essentials be embodied in the grant of the patent therefor.

It is believed that a sufficient number of cases has been referred to, in order to indicate to some extent the writer's impression of the true meaning of Revised Statute 4903 and of its accord with fundamentally right principles as applied in rendering decisions as to patentability, and accordingly more extended specific references to cases will not be given. The examiners well know the law relating to all of the other grounds of rejection constituting bars to grants of claims, whether they involve the question of change of material, substitution of equivalents, duplication of parts, omission of parts, mere mechanical skill, etc., and it is submitted that, in decisions in all of such cases, not only references to prior

art and references to legal precedent unfavorable to the grant should be cited, but also "information" under the statute that will aid inventors as to how to overcome statutory bars, should also be given therein.

Sixthly, Notice of Prior Pending Art Under Revised Statutes 4904.

If patents are to be examined and granted with a view to making inventors secure in the exclusive rights to their inventions, in accordance with constitutional requirements, it is essential that notices of the prior unpublished pending interfering art be sent in all applications which would be anticipated or interfered with by the prior pending art disclosure, just as notices of prior published art are sent in *ex parte* cases.

Your attention is now called to Revised Statutes 4904 which is as follows:

> "Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with any unexpired patent, he shall give *notice* thereof to the applicants, or applicant or patentee, as the case may be, and shall direct the primary examiner to proceed to determine the question of priority of invention. And the Commissioner may issue a patent to the party who is adjudged the prior inventor, unless the adverse party appeals from the decision of the primary examiner, or of the board of examiners-in-chief, as the case may be, within such time, not less than twenty days, as the Commissioner shall prescribe."

It is to be noted that the statute refers to interfering "applications" and "interfering applications and patents," and not to mere *claims* for substantially the same invention, as per Rule 93.

Now, since it is essential that patentable matter be found in alleged interfering applications before an interference can be declared, and if a proper determination of the fundamental meaning of Revised Statutes 4893 and 4903 resides in the requirement that the examiner search for patentable matter as well as search

for statutory bars if they exist, and to furnish helpful information to inventors as well as to cite references, and if it be fundamentally right to set aside legal fiction in favor of fundamental fact and truth, then the essential is that an application interferes with another application or patent under the statute when the real invention in one application interferes with the real invention in another application or patent without reference to the particular claims which may happen to be drawn, whether by those who, having proper qualifications, draw claims to the real invention disclosed, or by those who by reason of ignorance, inadvertence, accident or mistake draw claims that are not directed to the real invention disclosed. It is believed that under the plain broad terms of the statute interference exists whenever co-pending applications or applications and patents contain common patentable subject-matter, and whenever the allowance of patentable matter in one case would interfere with the exclusive rights granted in another case. The terms "application" and "interfere" should be given their broad, plain and ordinary meaning and not a forced meaning based upon the legal fiction that the claim already presented defines the real invention and that the question of interference must be decided upon the claims that happen to be drawn in the respective cases no matter how ignorant the claimant may be in one case or how skilled the applicant may be in another case. An invention properly claimed in one case is not a different invention when, through inadvertence, accident or mistake, it is improperly claimed in another case or even when disclosed but not claimed at all therein. Proper prosecution and examination of both of such cases would necessarily result in finally allowing claims to the same real invention in both cases, and it seems quite reasonable to assume, therefore, that in determining the matter of the declaration of interference, consideration should be given through and beyond the claims already drawn to the real invention in each case.

It is believed that, in the past, when considering whether an interference should be declared, much error and consequent injury has been occasioned by determining this important question before one or more of the applications under consideration have been fully

prosecuted and examined with a view to ascertaining what is the real invention made by the applicant, and it is believed that before an interference is to be declared, it should be fully determined by proper examination and prosecution what is the real common invention in all cases involved.

The view that applications or applications and patents interfere when the right to the real invention in one case interferes with the right to the real invention in the other case without reference to the particular claims that may be drawn, does not mean that interferences should be declared in all such cases, but it does mean that in all such cases "notice" under the statute should be given to each party of the real interfering invention of the other party.

The importance of this *notice* under the statute can not be over estimated, because if notice be withheld and patents be granted without notice of anticipating prior pending art or pending art that would render insecure the rights already granted in the patent, the fundamental contractual rights, the constitutional rights of the patentee and the plain broad terms of the statute would be violated.

A case in illustration may be given by referring to claims involving a crushing roll having a novel crushing dress as an element of an organized mill. In one application filed by one inventor merely the roll *per se* having a particular new grinding dress is disclosed and claimed. In a later application disclosing the same roll having the same dress filed by another inventor, through ignorance, inadvertence, accident or mistake, merely the alleged combination of a roll with a grinding dress together with the elements of one of the several different forms of general mill construction is claimed. Claims to the crushing roll *per se* having the particular dress if they were presented would be allowable in the second application in view of the prior art, and if an interference were declared, evidence might be produced to prove that the second applicant was the first inventor thereof. However, no interference is declared, and the combination claim is patented without notice to this later applicant of the existence of the prior application in which the roll *per se* is claimed. This patentee has constructive

notice of all published anticipatory matter affecting this claimed matter and having no actual notice of prior interfering pending matter he presumes that there is no pending anticipatory matter that would prevent him from enjoying the exclusive right under the constitution to his invention that has been granted him, and may be he has established a plant and has procured others to make investments therein. Then afterwards the grant of the patent upon the roll *per se* soon convinces him that there is an interference with this right to practice his real invention and that he has no secure and exclusive right to make the invention made by him and much business disturbance and financial loss results.

It may be said that this fundamental wrong may be righted by a reissue of the patent first granted or by filing a divisional application, but in such cases if either the reissue or divisional application eventuate in a patent for the roll *per se* there would be two patents for the same invention which is plainly in violation of the fundamental principles which have been referred to in so much detail in this paper and would doubtless result in injury to the public.

In order further to illustrate the broad fundamental principle thought to be involved in a fair interpretation of Revised Statute 4904, let it be presumed that case "A" is filed in which is claimed "A tablet of wax-like material having a record of sound vibrations *cut therein*." The applicant in this case being skilled in the proper practice of drafting claims for the real substance of inventions and having in mind correct fundamental principles, does not conceal this broad invention in an alleged combination of elements of a sound reproducing machine, but distinctly defines his real invention in order that the people may clearly know the precise scope and character of the invention newly made. The examiner upon examining the alleged invention presented finds that the claim is clearly patentable in view of the prior published art. But upon investigation of the pending art the examiner finds an application "B" long pending and disclosing and claiming a method of duplicating sound records, the first step of a claim therein being: The method of duplicating sound records which consists first, in cutting in a tablet of wax-like material

an undulatory record of sound vibrations and then electroplating, etc. There are no claims in this case "B" for the process of making records of sound *per se*, or for the record made as claimed, but this new and patentable matter is covered up in the complicated claim referred to and accordingly no interference may be declared between cases "A" and "B" under the terms of Rule 93. Application "A" is allowed and is patented for the *exclusive* right to make, use and sell the record tablet as claimed therein, notwithstanding the fact that the Government when granting this exclusive right has full knowledge of the prior pending art as in case "B," which would necessarily invalidate the patent and make it *unexclusive* when afterwards the patent in case "B" is issued. The patentee in case "A" then knows for the first time practically, if this office did not know technically, that there was and is interference between case "B" and his case and that the grant by this Government has been not only valueless, but has occasioned much loss and business disturbance.

It is submitted that the grant of a patent to "A" without *notice* under 4904 of the Prior pending art that would interfere with the rights granted therein is not only clearly in violation of the contractual and constitutional character of the grant, but also is in plain violation of the express terms of the grant.

It is submitted that in all cases in which the real invention in pending applications or applications and patents interfere, notices should be sent to the parties whose interests would be affected without reference to the particular claims in the cases and that interferences should be declared in all such cases.

While these elementary observations have been made with reference to the question of interference with a view to inducing the examiner to study the fundamentals involved in the matter of interference under the statute, yet in order that this general question may be pursued a step further, the practice under Rule 75 will now be considered.

We have in former lectures been well informed of the essentials of affidavits under Rule 75 filed in order that the bar of prior patents granted within two years prior to the application may be avoided.

It is, however, with reference to its relation to the matter of interference under section 4904 that consideration will now be given. And to illustrate the fundamental point sought to be made resort will again be made to the crushing roll and the machine including the crushing roll, for illustration. Let it be assumed that the application filed by one inventor for the alleged combination including the novel crushing roll was filed first and the application by another inventor for the novel crushing roll *per se* has been later filed. And let it be assumed that the application for the alleged combination has gone to patent without notice to the later applicant and the claim for the roll *per se* has been afterwards rejected upon the patent. The inventor of the roll *per se* files an affidavit under Rule 75 in which he states facts showing that he completed the invention in this country prior to the date of filing of the patentee's earlier application and his patent issues for the novel roll *per se*, so that we now have two patents granted, one for the combination including the novel roll, and one for the novel roll *per se* and the exclusive rights granted to the first patentee are thus interfered with by the superior exclusive rights granted to the second patentee without notice to the first patentee. The real invention in these two cases is the same, for as we have seen in considering the educational and the contractual character of the grant, the real invention is that embodiment of the inventive disclosure which corresponds in scope and character with the extent to which the people will have been educated thereby and in both of these cases the people will have been taught to make a new and useful crushing roll and if it be that the real invention is the same in both of these cases and that the invention in one case does not become a different invention in another case because in may be improperly claimed therein, then it is submitted as a matter for elementary consideration and study whether under Revised Statutes 4904 before the allowance of the later application the prior patentee should not have been notified of said later application, the grant of which would interfere with the already existing exclusive rights granted to him. Not only in order to prevent violation of exclusive rights in the patent when granted, but also to prevent double patenting and to prevent harmful

litigation, notices under Revised Statutes 4904 should be sent both under Rule 75 and Rule 96 to applicants and to patentees advising them of the pending art containing claims that would interfere with the exclusive rights to which they would otherwise be entitled, without reference to whether the properly or improperly drawn claims be directed to the same matter or not.

These are some of the fundamentals which, it is thought, should be considered by those who may be unfamiliar with the elementary principles involved in the establishment of the Patent System and in the grant or refusal of Letters Patent for inventions, and the deeper and more thorough the consideration of these fundamental truths involved in the study and application of the principles to which reference has been made, the clearer will be the course to be pursued, not only in facilitating, expediting and improving the examiners' work, but also in avoiding criticism of, and in dissipating opposition to, the Patent System and to the present system of prosecution and official examination of patent applications.

If at any time, however, criticism or opposition to the Patent System appear among the people in whose interest it was established, the attitude of those concerned will doubtless be attributable to the following causes:

1st. Because the people generally have not been informed and do not know that letters patent for inventions are not monopolies in restraint of the existing right of the people, but that they create new forms of property for the whole people to be freely enioyed by them after a period of exclusive ownership by the patentees.

2nd. Because the people generally have not been informed and do not know that the Patent System was established in the interest of the people as an industrial educational system, to educate the people to establish and practice new or improved industrial arts and enterprises and thereby to promote the indistrial progress and material welfare of the whole people.

3rd. Because the people generally have not been informed and do not know that Letters Patent for inventions, are contracts made in the ultimate interest of the people, between the people on one hand and inventors on the other hand, the terms of this contract being that

inventors agree to publish complete disclosures and distinct definitions of their inventions, which otherwise may be kept secret by them, and that the people in consideration of the disclosure and publication thereof agree to make inventors secure in the exclusive rights to their inventions, the Government through its designated officials being charged with the duty of seeing that the terms of these contracts are fair alike to the people and to inventors.

4th. Because the people have not been informed and do not know that the only means provided in terms by the constitution to promote industrial progress and prosperity, are the rights granted to inventors of the secure and exclusive ownership of their inventions for limited times.

And if criticism of or opposition to the present system of prosecution and official examination of patent applications at any time develop, this attitude of those concerned may be found to exist because of the following conditions:

1st. Because some of those who solicit patents are known to prosecute patent applications solely to obtain patents and the incidental fees, without regard to whether the alleged inventions may promote the progress of the useful arts in the interest of the people and without reference to whether inventors are made secure or exclusive in the rights to their inventions and,

2nd. Because we examiners, in some instances at least, have granted some patents the examination record of which shows the distinct need of:

1st. A uniform standardized system of instruction for assistant examiners (possibly in a single Division of Instruction), and,

2nd. A uniform standardized system of examination of applications consisting of:

1st. A mature and deliberate examination of the alleged invention in the whole disclosure to find patentable matter, in the interest of the inventor, and thorough search in the prior art to find statutory bars in the interest of the people as indicated in Revised Statute 4893.

2nd. Standardized official actions giving full information in the interest of the inventor and full citation of

references in the interest of the people as indicated in Revised Statute 4903.

3rd. Due and timely notice of all pending applications which would, if granted for the real inventions therein, interfere with and make insecure and unexclusive the rights to inventions in other applications or patents, as indicated in Revised Statute 4904.

It is submitted that only by some such uniform standardized system of examination of applications as this, may the work of examiners be made to conform to the fundamental principles involved in the educational character and in the contractual character of the grant and possibly only by such a system as this may the examiner's work be made to comply with constitutional requirements which are controlling.

September 28, 1916.

PROTECTION OF INVENTION

Having Special Reference to Electrical Methods and the Bearing of the Doctrine of Equivalents on Function and Method

A paper read October 5, 1916, before the Examining Corps of the United States Patent Office

BY

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WASHINGTON, D. C.
1916

Protection of Invention

Having Special Reference to Electrical Methods and the Bearing of the Doctrine of Equivalents on Function and Method

By

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Some among you may recall the story, in the old McGuffy reader, of the little girl who chose as the title of her composition, "Time, Temperance and Industry." "Time," she wrote, "is short—we should all improve our time. Temperance is a very useful thing." Here, overwhelmed, she stopped. In selecting a subject it seemed to me best to discuss those questions with which we most frequently have to deal in the daily work of our electrical division, leaving subjects I knew less about for those who knew more about them. But when I came to write I felt much like the little girl—I was overwhelmed at the immensity of my subject and the things I thought to say seemed common knowledge. I will endeavor, however, to emphasize a few points of practice, with particular reference to electrical cases, which, if judiciously practiced, would, I believe, lead to increased patent protection and, at the same time, to the simplification of our patent system, the complexity of which is increasing at an alarming rate.

In all patent work it is most essential to bear in mind that it is for *invention* and *invention* only that the constitution and statutes sanction the grant of a patent monopoly (Const., Art. 1, sec. 8; R. S., 4886). A noted physicist says, "Find where the energy goes and you can solve any problem in physics." Likewise, find wherein the *invention* resides and the only problem concerning

the extent of valid patent monopoly is already solved. In his annual report for the year ending December 31, 1915, the Commissioner says:

> "Fundamentally, knowledge of the invention is more important than knowledge of the rules."

No solicitor can best prosecute a case at any stage of its proceedings and no Examiner can properly act on the same without a thorough knowledge of the *invention* in its relation to the prior art. He who sees the invention clearly will claim it clearly. He will present no endless chain of claims of indefinite and ambiguous meaning directed in part to other than the *real invention.*

The requisites of valid patent protection are:

(1) An adequate original disclosure.

(2) A correct determination of the statutory class to which the invention belongs, and

(3) The drafting of the claims in such form as to cover the entire unexpected advance made by the invention over the prior art and nothing more, nothing less.

DISCLOSURE.

New Matter.

A full and complete disclosure in the application as *originally* filed is, by statute, a condition precedent to the grant of a valid patent, yet many electrical cases, particularly those from abroad, are filed in such form that the real invention can not be determined even by one skilled in the art. A frequent error is the failure fully to disclose particular features vital to the invention or, if disclosed, to state their function when dependent upon a special design not set forth.

Statutory bars to substitute applications frequently exist and as a result, amendments involving questionable matter are either accepted and the validity of the patent grant thereby placed in jeopardy, or the patent is refused altogether. Broad statements in the original specification can not properly constitute a basis for subsequent specific amendments unless the matter added involves merely the *obvious* conventional way of translating the statements into practice.

Order in Specification.

Examination and search would be much facilitated if elements were ordinarily designated by *reference numerals* and described in numerical order, the detailed description being followed by a complete and concise statement of the *operation* of the invention.

Illustration.

While a full and complete disclosure is essential, on the other hand, the invention should be disclosed in its *simplest aspect.* For instance, where the invention resides in a motor provided with a main field, an armature and a compensating winding, bearing certain space relations to each other, the invention is best illustrated by the simplest form of diagrammatic view (see Chart for Draftsmen, Rules of Practice) showing these parts conventionally in their proper space relations (Illus.-Pats., 946,502; 1,138,-673; 931,336). To present working drawings or a photographic view of such a motor showing details of base supports, casings, journals and bearings, or even the specific form of pole pieces and windings, where such specific forms are not of the essence of the invention, not only places needless labor upon the office but obscures the real invention. This is even more true of complicated systems of wiring involving many circuits. *Only circuits typical of the invention* should be illustrated and they in the *simplest form possible, duplication being ordinarily avoided.* An intricate working drawing of such a system is the bane of all who have to deal with it, and the amount of unnecessary time and labor in the aggregate, spent by the office, attorneys and the courts in deciphering it, both before and after patent, can not be estimated. If we multiply one such patent by the total number of this character among nearly one and a quarter million patents granted by our office we can appreciate what an unnecessary load our system labors under.

The *main* circuit and *all apparatus connected in series* therewith should be shown in *heavy* lines and, so far as practicable, *in the same horizontal or vertical direction,* while the *shunt* and *control* circuits should be shown in *lighter* lines preferably at right angles thereto. Lines should cross as little as possible. The arrangement of apparatus should be such as to keep the groups distinct and clearly show their relations at a glance (Illus.-

Pats., 1,113,199; 980,707; 1,170,211). Much ingenuity can be displayed in skillfully arranging the parts of electrical systems and all work in connection therewith is ever afterward facilitated thereby. So vital is this to a clear understanding of the invention that in some cases in division 26, it is necessary for the examiner to make his own layout of the system in working up the case.

In the case of *methods* each step of which involves a different particular arrangement of parts of an electrical system, in addition to the showing of the system *the arrangement of parts for each step should be diagrammatically illustrated in the most conventional manner, the diagrams being arranged in the order of the steps.* This is more important to a clear disclosure, even, than a complete layout of the system including the controller features and connections, since given the sequence of steps desired the designer or draftsman may well supply the latter (Illus.-Pats., 527,947; 516,834; 1,199,453; 587,340).

Where the drawing alone can not be made to tell the whole story of an invention, often a *legend applied to a part* will facilitate search. For instance, where it is essential that the field magnet of a dynamo electric machine be normally saturated the addition of the words "normally saturated" discloses at a glance the essential characteristic of the device.

STATUTORY CLASSES OF INVENTION.

Each of the four statutory classes of invention—art, machine, manufacture and composition of matter—finds illustration in the electrical arts.

The last class is illustrated, for instance, in brush and lamp filament compositions, insulator compositions, various battery compositions and the like. No problems special to the electrical arts are usually presented therein and further consideration of this class need not be given.

Article Defined By Process.

The same may be said of the class of manufactures save that comment may be made as to one question frequently arising in this class of cases, namely, whether such terms as "cast," "welded," and the like when used, for instance, to describe characteristics of parts of a dynamo electric machine, or, say, that portion of a metal casing surrounding terminal

connections for vacuum apparatus, etc., are objectionable as attempting to define the characteristics of an article by the process of making it. It would appear that where such characteristics are essential to the article as completed and these terms are employed with the intention to describe the present, final condition of the article rather than the method of arriving at that condition, whether that condition is apparent from inspection or not, no objection should be raised to the use of such terms, particularly where the English language affords no convenient substitute (*Ex parte Painter*, 1891 C. D., 200).

Method or Process.

A most perplexing question, and one open to great difference of opinion, as regards the class to which an invention should be assigned, arises in connection with the first two statutory classes—method and apparatus. This is particularly true of electrical cases. A most helpful discussion of the more general subject will be found in a very excellent paper by Mr. E. D. Sewall (Sci. Amer. Sup., Oct. 1 & 8, 1910), quoted at length by the Commissioner in his Georgetown lectures.

By the early construction placed upon the Supreme Court decision in *Risdon Locomotive Works vs. Medart* (158 U. S., 68; 1895 C. D., 330), suspicion was cast upon all methods not involving chemical or other elemental action and it seemed sufficient condemnation of a claim to state that it was for a "mechanical method or process." That this view was without justification appears from the later decision of *in re Weston* (17 App. D. C., 431; 1901 C. D., 290) and the Supreme Court decisions in *Steinmetz vs. Allen* (192 U. S., 543; 1904 C. D., 703) and the *Expanded Metal Case* (214 U. S., 366; 1909 C. D., 521), as well as from many of the earlier decisions of the courts.

That no reason exists for distinguishing between chemical and mechanical, electrical or other methods appears obvious from a consideration of the fundamental conceptions of those natural phenomena to which the patent field is confined. We learn from a study of the physical sciences that all natural phenomena involve just two conceptions—(1) matter and (2) motion; in other words every phenomenon in the physical world and

therefore every phenomenon in the domain of patent monopoly is one of change of position, or motion of matter. Matter we understand may exist as a mass, molecule, ion, atom, electron, etc., and all physical changes involve motion of one or more of these, whereby new relations between them are established. This is the field in which all inventors have to work and all inventions involve manipulations therein. *Methods or processes are concerned with the manner of moving portions of matter into particular relations to produce the final result; manufactures and compositions of matter involve the disposition of matter resulting from the performance of methods; while machines are automatic devices for performing methods.*

A new way devised for *moving* an atom of sodium from a molecule of common salt and *moving* into its place an atom of hydrogen from some other molecule whereby the product, hydro-chloric acid, results, if new and unobvious, would be patentable as a chemical method. Equally, would it appear that a method devised for moving portions of a conductor into position on an armature core, whereby the product, an armature member, results, is the proper subject-matter of patent protection if new and unobvious. The same reasoning would appear to apply to processes for producing other products—such, for instance, as the method of operating a machine to produce different rates of motion, for it would appear that the product of a process may equally well be a form of matter or of motion or energy in any commercial form. One reason why prejudice has always existed against the patentability of such processes is believed to lie in the fact that most processes of this type are old or clearly obvious and therefore lacking in invention, so that we come to think that, as a class, they possess some inherent quality which bars them from the pale of patent monopoly.

Electrical Methods.

The methods or processes commonly met with in electrical cases may be roughly classified as follows:

(1) Chemical—Such as those for producing brush or filament compositions and the like.

(2) Mechanical process whose product is an article of manufacture or a machine, e. g., squirted filament or armature structure (*in re Weston, supra*).

(3) Method of manipulating machines. The product may be motion or energy of some form, or an emf or the like; e. g., arrangement of motors in series and parallel for speed control.

(4) Method disclosed only in connection with a particular machine or system for automatically performing it, but claimed without reference to the particular means disclosed.

The first and second classes require no special discussion save to state that the *novelty*, *utility* and *obviousness* of these methods are the essential factors in determining their patentability.

The third and fourth classes are subjects of much difference of opinion and the practice as to the fourth class in particular can not be said to be settled.

(3) *Methods of manipulating machines* may be illustrated by the following claim:

> The method of regulating the speed of mechanism driven by a plurality of electric motors which consists in successively connecting the motors, in series, in series-parallel and in parallel to a source of electrical energy.

The product here is a regulated speed. Is the method a patentable one, or should the claim be in the form of apparatus? Since method must be prior in the order of conception to apparatus for performing it, and since given the conception of the above method the apparatus (switches and connections) for performing it would be obvious, if the inventor has taught *anything* that was not obvious before it must be the method. The method under these circumstances would certainly be patentable rather than the apparatus.

Moreover, an apparatus claim, in theory, should, it is thought, define the structure as it stands inert though its elements may be modified by limitation of *inherent adaptation*. It would therefore appear to be illogical for

such claim to state a sequence of operations which is not inherent in the mechanism but is subject to the will of the operator. There may be without question invention in a new and unobvious machine for performing an old method; likewise there may be, it would appear, invention in a new and unobvious method of operating an old machine. The sole test of each is *obviousness.*

(4) *The fourth class of methods above specified, namely, that disclosed in connection with only a single machine or system for automatically performing it,* has given rise to endless contention having been variously condemned as the expression of the mere function of the machine, the operative theory of the mechanism, etc.

In the discussion immediately following, the propriety of taking out separate patents for alleged inventions in method and apparatus, based upon the same identical disclosure, is not under consideration, but merely the form in which the invention may be properly expressed. The question of separate patents will be treated on pages 13 to 17 and 23 to 27, inclusive.

It is generally stated that a process to be patentable must be capable of being performed by any of several different mechanisms or by hand, it being held that if no other means than that disclosed can be conceived of for performing the process then it is unpatentable, as constituting the function or operative theory of the machine. The logic of this position is not apparent, for it would appear that if a method exists as a complete mental concept independent of the machine for performing it, it would be patentable under the statutes whether it can be performed by only one known mechanism or several. Its character as a method is unmodified by the limitations of means for performing it, it being sufficient, in logic at least, if the inventor disclose only a single practical means.

Moreover, if invention was required to provide the only known means for performing the method who can say that at some future date another machine may not be invented, capable of performing the same method, and in such case is the method to be transformed by that act from one that is *per se* unpatentable to one that is patentable? Is its inherent quality as a method altered

thereby? An answer in the negative is given by the Circuit Court of Appeals in *Century Electric Co. vs. Westinghouse Elec. & Mfg. Co.*, 191 F. R., 350; 1914 C. D., 267. The problem however, is naturally a difficult one for it arises out of the vortex produced by the convergence of method and mechanism for performing it. A consideration of certain fundamental concepts will aid in its solution.

It has been aptly said that the product or thing desired is first in the order of conception, the method of producing the product second, and lastly the means or mechanism for performing the method. The product is more often old or obvious and may usually be produced by many methods new or old, the method is less often old or obvious and usually may be performed by many machines, while least obvious usually are machines for performing methods.

To illustrate our discussion by a simple example, let us assume that at a period before electric motors were known the desirability of such machines for producing continuous rotary motion was recognized. The product, rotary motion, was notoriously old and many processes existed for producing it and also many machines for performing the several processes. Let us assume that the magnetic compass also was known and that an inventor in observing the fact that the magnetic needle always sought to turn from a position at right angles to the earth's magnetic field of force into a position in line therewith, conceived the idea that if it were possible to have a rotating body in which the line of its own magnetization would stay fixed in space at an angle to the main field of force, but could shift within the body itself as the body rotated, notwithstanding the tendency of the body to so rotate as to bring its line of magnetization into line with the field of force, then continuous rotary motion would be produced magnetically. He here has conceived a new method of producing continuous rotary motion, which may be expressed as follows:

> The method of effecting continuous rotary motion which consists in producing a magnetic flux in the direction of a line fixed in space, subjecting a rotatable member thereto, and main-

> taining in said member regardless of its position in space a flux in a line displaced from the line of the first mentioned flux, whereby the fluxes react to produce continuous rotation of said member.

Before the method can be practiced or patented, however, our inventor must devise means for performing it. He now conceives the idea of employing for his rotary member, a wound armature provided with a commutator, and brushes fixed in space, bearing thereon, through which current to produce the magnetization of the rotary member is led from the outside. The position of the brushes gives him the line of magnetization in the rotatable member desired and enables him to perform his method. He has evolved the ordinary d. c. commutator motor and is entitled to claims therefor. Is he also entitled to claims for the method? Since at this stage no other means for performing the method is known or obvious, he would be barred if we apply the test that the method must be capable of being performed by other means or by hand. His claim would be said to cover the function or operative theory of his machine. However, his very revolutionary work in the art inspires others to devise other machines for performing the method he has taught them. The synchronous motor, the repulsion motor and even the single phase induction motor, may be assumed to have resulted. Clearly his method is not inherently different from what it was before and yet it now satisfies the condition that it can be performed by means other than the single means first disclosed and that it is capable of an existence in the practical arts apart from the latter means. In fact, that it was capable of such existence would seem an obvious conclusion from the original proposition that the invention of the method was prior in point of time to that of *any* means for performing it. It is believed that the method of our illustration should be patentable, if new and unobvious, even though a single means only was known for performing it. If claims to the method must be rejected, however, it is believed that the only logical ground would be that they are broader than the invention of practical means for performing the method, since

the inventor has disclosed only one means whereas his method claims dominate all means for its performance, but this would appear to be unfair to the pioneer who has opened the vista to a new art, and would, it is thought, be out of harmony with the Constitution, the Statutes and the leading decisions. In the words of the Supreme Court in the *Telephone Cases* (126 U. S., 1; 1888 C. D., 321), "other inventors may compete with him for the ways of giving effect to the discovery; but the new art he has found will belong to him and those claiming under him during the life of his patent."

But, it may be argued, would not a claim to a combination of means, each limited by function corresponding to the steps of the method respectively, amply protect the inventor and obviate argument in those cases where admittedly the method must be performed by a machine? Our illustration is believed to answer this question in the negative, for the broad apparatus claim based on the disclosures of the d. c. commutator motor would necessarily include means (corresponding to the brushes) for maintaining the flux in the rotatable member in a line displaced from that of the main flux, whereas the synchronous motor would reveal no corresponding means. It accomplishes this result by the inherent action of the machine as a whole when at substantial synchronism, and would therefore not be dominated by the means claim. This matter will be considered more at length in the subsequent discussion of the relation of function in apparatus claims to method.

A method of the type indicated which analysis shows must be conceived prior to the conception of apparatus for performing it should, in the opinion of the writer, be sharply distinguished, however, from certain types of methods, frequently met with, in which it is clear that the machine was prior in the order of conception and that the alleged method merely states the *obvious* and *intended* manner in which the machine was designed to be operated. Such method is believed to be illustrated by the following claim drawn on the same d. c. commutator motor as the former method claim:

> The method of effecting continuous rotary motion which consists in passing a current through

> the field winding of a motor to produce a main field flux, subjecting an armature, provided with commutator and brushes, to said field flux and simultaneously passing a current through said brushes, commutator, and armature whereby current in the armature reacts with said field flux to produce rotary motion.

This method could have no existence until the motor upon which it was designed to operate was devised, and given the motor, the method is merely the obvious and intended way of operating it to perform our former method. Were it a new and unobvious way of operating an old machine, however, the claim might be patentable (see class 3, supra).

Illustrative Decisions.

A consideration of some of the more fundamental court and office decisions bearing on electrical methods will be illuminating.

First to claim our attention is the celebrated case of *O'Reilly vs. Morse*, 15 Howard, 62 (Supreme Ct.). Morse's eighth claim covered in substance the use of the electric current for marking intelligible characters at a distance, a result that many might, without the exercise of invention, have desired to accomplish prior to Morse's disclosure. The claim did not set forth any method of applying the electric current whereby the result could be accomplished. It did not set forth the invention. As stated by the court, the claim was clearly too broad and not warranted by law.

Next of special interest is the Supreme Court decision in the epoch-making *Telephone Cases*, cited above. The claim there under consideration reads as follows:

> The method of, an apparatus for, transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations similar in form to the vibrations of the air accompanying the said vocal or other sounds, substantially as set forth.

This claim covers a subcombination of the complete method (if we ignore the reference to apparatus) of transferring speech to a distance, namely, the steps involved in its transmission. It does not cover the reverse method of receiving. The product is the transmission of sound. The method of producing it is stated, in substance, to consist in causing the vibrations of the air accompanying the sound to produce electrical undulations similar in form to the air vibrations and transmitting the electrical undulations to the point desired. The claim does not merely state the result that intelligence is transmitted by an electric current, as in the *Morse* case, but states the manner in which the electric current is modified to bring about the result. The court held that the claim covered a patentable method.

It is noteworthy that the court did not consider the method to cover merely the function of the machine or the operative theory of the mechanism.

Independence of Method and Apparatus.

We pass now to a closer consideration of the relationship that may exist between method and apparatus and in this connection the decision of the Supreme Court in *U. S. ex rel. Steinmetz vs. Allen, Commissioner of Patents*, 1904 C. D., 703, is of special interest. The question there involved was the propriety of the requirement of division between claims to a method and other claims to the apparatus for performing it, certain of the claims of the respective groups (see particularly claims 6 and 10) being substantially the same in scope though drawn to different statutory classes of invention. The court said:

Double Patenting.

> "Can it be said that a process and an apparatus are inevitably so independent as never to be 'connected in their design and operation'? They may be completely independent. (*Cochrane vs. Deener*, C. D., 1872, 242; 11 O. G., 687; 94 U. S., 780.) But they may be related. They may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus. In such case the apparatus would

be the dominant thing. But the dominance may be reversed and the process carry the exclusive right, no matter what apparatus may be devised to perform it."

A similar situation was presented in *ex parte Creveling*, 1904 C. D., 353, and *in re Creveling*, 1905 C. D., 684; 25 App. D. C., 530, the former being the Commissioner's decision and the latter that of the Court of Appeals of the District of Columbia in the same case. Creveling had taken out an apparatus patent for a system of electrical regulation and thereafter sought to obtain a patent for the alleged method performed by that apparatus. Claim 1 of the application and claim 12 of the patent read respectively as follows:

> 1. The herein-described method of regulating a generator which consists in creating an independently determined magnetomotive force, and creating an opposing magnetomotive force which is a function of the current generated and thus producing a resultant magnetic field whose polarity is dependent upon the current generated, exposing to the influence of the above-named resultant magnetic field, a member tending to set up an independent magnetic field, producing motion in a positive or negative direction depending upon the polarity of the resultant magnetic field and by said motion in one direction, increasing the output of the generator and in the other direction, decreasing the said output.
>
> 12. In a system of distribution, means regulating a generator, comprehending means creating an independently determined magnetomotive force, means creating an opposing magnetomotive force which is a function of the current generated and thus producing a resultant magnetic field whose polarity is dependent upon the current generated, means exposed to the influence of the above-named resultant magnetic field tending to set up an independent magnetic field, producing motion in a positive or negative direction dependent upon the polarity of the resultant magnetic

> field and means whereby said motion in one direction increases the output of the generator and in the other direction decreases the said output.

The method claims were refused by the Office on the ground that they did not cover a true process but covered the mere function of the machine as disclosed in the patent, and the decision from which appeal was taken to the court contained an exceedingly clear statement of that view of the case. It is a significant fact, however, that the court did not adopt the same view but after pointing out that the claims were incomplete, made the following comment:

> "It has not been shown that there is any difference in the inventive concept underlying the present disclosure and that of his prior patent and, on the contrary, the reverse appears to be the case. Accordingly, even if we were justified in disregarding the character of the claims presented and referring to the invention itself, as disclosed, in determining the patentability thereof, we should be constrained to hold that the issuance of a patent upon the present application would be, in effect, a grant to the applicant of the same extent as that of his prior patent and the final disposal of the case would not be affected."

It thus appears that in the opinion of the court the case turned upon the question of "double patenting."

The same view in regard to method and apparatus claims of this character has been repeatedly taken by the Board of Examiners-in-Chief. In *ex parte Sieberman*, Patent No. 1,101,214, the invention claimed was the method of speed control of a plurality of electric motors (Class 3, *supra*). The Board said:

> "If the two claims (method and apparatus) were presented in different applications, we would agree with the Primary Examiner to the extent of holding that both should not be allowed. In view of the fact that both claims are presented

> in a single application, and in view of the fact that the determination whether a given inventive idea resides in the process or in the apparatus in such cases as this is largely a matter of individual opinion, and at the same time is something which is of no practical importance to the public, we believe the process claim should not be rejected merely because of its process form."

Reissue to Avoid Double Patenting.

In the proceedings that led to the grant of the *Thomas* reissue Patent No. 13906, where, four years prior to the decision on appeal, an apparatus patent had issued for a mercury vapor rectifier after a requirement of division by the Office, it was held that claims to the method performed by that apparatus could only be obtained in a reissue. The Board said:

> "We believe that the appealed claims might properly have been taken in that (apparatus) patent as broader statements in different form of the same fundamental invention that is set forth by the apparatus claims thereof. And in view of the fact that the applicant sought to take such claims in his patent and has persisted in his right to this broader protection from a time prior to the issue of his patent, it would seem that he is entitled to a reissue."

A different conclusion as to the independence of apparatus and method claims to an induction motor, in certain Tesla patents, was reached by the court in the case of *Century Electric Co. vs. Westinghouse, supra*, wherein it was held that both apparatus and method claims were valid though in different patents issued on different dates (see, also, earlier decisions on same patents cited therein); but the holding in this case is not irreconcilable with the views expressed in the foregoing decisions. The court held that the Tesla applications "were the applications of a pioneer in the art who had discovered a new process and a new apparatus." Moreover, it pointed out that the claims had been divided in

response to a requirement by the office in accordance with an unyielding rule of practice (a clause in old rule 41) requiring that machines and processes in the performance of which the machines were used, be presented in separate applications. This clause, as the court points out, was held void in *Steinmetz vs. Allen, supra,* but in the opinion of the court the contractual relation entered into by the public and the inventor while the rule was in force, resulting in the grant of separate patents, was binding upon the parties thereto.

To summarize, it would appear:

First, *that methods disclosed in connection with only a single machine for automatically performing them may nevertheless in proper cases be patentable.*

Second, *that method and apparatus claims of this character should be presented in the same application.*

The question naturally suggests itself, can both method claims and broad apparatus claims of substantially the same scope be logically patentable even if presented in the same application? Until practice has become more settled it is believed, as indicated in the decisions cited, that both groups of claims should be allowed if presented in the same case, but the question as to the propriety of the two forms will be further considered in connection with claim structure and the relation of functional limitations in apparatus claims to method.

CLAIM STRUCTURE — DOCTRINE OF EQUIVALENTS IN ITS RELATION TO FUNCTION AND METHOD.

The patent claim is charged by statute with the duty of declaring the *invention* (R. S., 4888) and it is guilty of malfeasance in office if it declares more or less than the actual invention. If guilty of this charge it can be saved, if at all, only by benevolence of judicial construction, but however commendable judicial construction may be it is far fairer to the public and safer for the inventor to make certain his rights than to throw himself upon the mercy of the court. The claim structure is therefore of vital importance to the protection of invention.

Let us assume a stage of civilization when box-like containers were unknown; that some prehistoric genius

of whom no record remains, conceives the idea of transporting a number of small articles, such as potatoes and beans, by gathering them together and surrounding them with strips of bark to form a container the sides of which he held together with his arms and hands. If one could appreciate the degree of invention required at this stage of the art in conceiving this labor saving expedient he might concede that the inventor was entitled to a claim as follows:

> 1. The method of assembling small articles which consists in surrounding them by sides of flat material and retaining said sides in fixed relation to each other.

Our inventor, not content to do so much holding, further conceives the idea of binding together the parts of his structure with twisted ropes of grass. He is now entitled, say, to a claim as follows:

> 2. A container comprising sides and a bottom and means for permanently holding the same together.

Our prehistoric Edison next conceives the idea of making the joints more rigid by the use of nails or similar devices, and since the parts of his structure have a new, and before the event, unobvious cooperative relationship with each other, he would appear to be entitled to the following claim:

> 3. A structure comprising separate portions placed edge to edge and securing means passing through one portion and embedded in the other.

He would also be entitled to claims for the specific form of securing means *per se*.

Unpatentable Combinations, Doctrine of Equivalents a Test of.

As the art develops under the impetus he has given it, other fastening means such as screws, bolts and the like are devised, but in each case the *inventive act* is completed before the particular fastening means is associated with the parts which it is designed to hold together and since the old relationship of parts as set out in claim 3 teaches how to use the new fastening means, no further

inventive act resides in substituting it for the old means in the combination. He has improved a part not the entire machine. It follows that the new fastening means should be claimed *per se* and not in combination.

Were our illustrious inventor now to file an application in the United States Patent Office disclosing the preferred form of his box-like structure as held together by nails, he might be held to be entitled to claims 1, 2, and 3, and also several claims, say, defining his nail *per se*. This would appear to cover substantially the whole range of his advance in the arts. There would be nothing added to the scope of his protection were the aboriginal Blackstone who prepared the case to assert claims to the securing means, as stated in claim 2, in combination with the side and end, side and bottom, and end and bottom respectively; then a similar group defining his securing means as limited in claim 3; then other similar groups defining the nail in combination in more specific language. Likewise by specifying successively, with the other limitations, that the sides were flat, of fibrous material, and wood, the claims would be multiplied indefinitely. Such practice would secure the inventor no additional protection and would only obscure his real invention. Indeed, in his zeal not to overlook all possible permutations he would likely fail to assert claims 1, 2, and 3, and claims to the nail *per se*, so that even if his claims should be upheld by beneficent construction of the courts the scope of his protection would be limited to the use of his nail in combination with a box structure, and would not extend to its use in all other relations, as it would had he made appropriate subcombination claims to the nail *per se*.

In the opinion of the writer too few claims of the broader combination type, as 1, 2, and 3, supra, and particularly of the subcombination type, are allowed in our practice and far too many of the intermediate type involving conglomerations of elements and immaterial limitations in an attempt to cover all equivalents and uses. The latter practice works to the injury of the applicant for where he follows it the courts will apply the doctrine of equivalents with less liberality to his case.

The foregoing homely illustrations demonstrate the

value of the doctrine of equivalents as a test to determine the extent to which specific limitations of an element or subcombination should enter into a combination claim. From these considerations it would appear that the features or characteristics of an element or subcombination should never be more specifically set forth in the combination than they *actually cooperate in some new and unobvious manner* with the remaining elements of that combination. This is true because a claim alleges that invention was involved in associating each element thereof, in the particular form and manner specified, with its other elements. Therefor, if any part of this allegation can be successfully challenged the claim is unpatentable because it fails to express invention—an unpatentable combination.

We thus have exemplified the principle of "old combination" and the law of "equivalents," which while simple in the stating are the source of more vexation to the Office and applicant alike, perhaps, than any other phase of patent practice. The proper application of these principles is believed to be necessary to the adequate protection of patent property and is the obvious remedy against the increasing complexity of our patent system.

Function and the Doctrine of Equivalents.

Our illustrations, moreover, teach us, what the writer believes has not been sufficiently emphasized in patent practice, that the much maligned functional limitation has an indispensable duty to perform in claim structure, namely, *to cover the range of equivalents of an element or subcombination in its relation to the combination, both in cases where it would also be proper to include such element or subcombination specifically and in cases where it would not.*

Broad vs. Specific Function.

Now, if we compare the functionally limited element of claim 2, namely, "means for permanently holding the same (sides and bottom) together," with the functionally limited element of claim 3, namely, "securing means passing through one portion and embedded in the other," we observe that while they are corresponding elements of the same general combination the latter

covers a more specific range of equivalents than the former, i. e., it covers only such securing means as actually pass through one member and are embedded in the other. Although the more specific functional limitation would not be permissible were it merely the equivalent in the combination of the broader means (unpatentable combination), in the particular case under consideration it is permissible because it sets up a new and unobvious relationship of parts.

So-called Functional Claims.

We see, therefore, that claims to combinations may be patentable even though they differ only as to the breadth of the functional limitation of an element, just as they may differ as to the particularity with which an element or subcombination is structurally defined. For structurally defined and functionally defined elements do not differ in kind but merely in scope, each in its varying degrees of specificness occupying continuous portions of a scale from the most specific to the broadest statement of the element, and one merging by imperceptible degrees into the other. The rule governing the propriety of one character of limitation in a combination claim, it would appear, should not be different from that governing the propriety of the other. In each case the combination is patentable to the extent that there exists a new and unobvious cooperative relationship between the several elements as limited, for a combination claim *does not assert invention in any of its elements but merely in the cooperative relationship set up between them.* (*Pieper vs. S. S. White Dental Mfg. Co.*, 228 F.R., 301; 1915 C. D., 297; 218 O. G., 349; *Underwood vs. Gerber*, 1893 C. D.; 340 U. S., Sup. Ct.). This fact appears to have been ignored in the treatment of the so-called functional claim. *Whether, then, an element or subcombination, structurally or functionally defined, is new or old, we may, for the purpose of the combination, treat it as old.* It would accordingly appear that the functional limitation of an element of a combination claim in no case constitutes a strictly logical ground for rejecting it as functional. If the claim is unpatentable, as many such are, it is because of *the lack of a new and unobvious cooperative relationship* between the element

as limited by *specific* function, and the remaining elements of the claim—an unpatentable combination, as in the case of too specifically limited structural elements of combination claims.

The application of this theory to cases for a number of years convinces the writer of its sufficiency.

Illustration.—The claim in *in re Gardner*, 32 App. D. C., 249; 1909 C. D., 306, to a suitably inscribed dial in combination with a device for automatically indicating thereon simultaneous pressures and heat characteristics for super-heated vapor, asserts invention in associating a dial with an active element of particular description. In accordance with our theory the claim would be rejected for the reason that it is customary to provide active elements of measuring instruments of every description with appropriate indicating dials, as illustrated in references cited, and since no new and unobvious cooperative relationship between the dial and active element was set up, the claim failed to define an inventive act (unpatentable combination). Attention would also be called to the fact that should reference to the dial be canceled in an attempt to overcome the rejection on this ground, the claim would reduce to one covering *all devices* for automatically indicating simultaneous pressure and heat characteristics for superheated vapor and would for this reason be subject to rejection under *O'Reilly vs. Morse, supra*, and *ex parte Bullock*, 1907 C. D., 93.

Where the broad combination is indisputably old, as in the Gardner case, and it appears that the applicant is relying upon invention in the element functionally limited without regard to any new cooperative relationship it bears to the other elements, the claim might be rejected in the first instance on the ground that while in the form of a combination it, in effect, covers *all means* for producing the result stated. Such treatment, while often convenient and effective, is not strictly in harmony with the rule that a combination claim asserts no invention in any of its elements and that no element of a claim can be disregarded. It, moreover, becomes unwieldy and unreliable in dealing with claims having a larger number of elements, as, for instance, those under consideration

in *ex parte Pacholder*, 1890 C. D., 55, and in such cases the advantage of the former treatment becomes readily apparent.

It is often stated that if invention resides in the functionally limited element, or if the latter is a primary as distinguished from an adjunctive element then the function renders the claim unpatentable, but since a combination asserts no novelty for any of its elements but only for their cooperative relationship, no reason appears for taking a different standard of test for one element from that taken for another. To do so would penalize the pioneer inventor who must invent not only the combination but also the subcombinations and elements that go to make it up, for had he found the latter and their equivalents already in the art this ground of rejection would not have been urged against his combination claims.

Again, it would appear that such expressions as "constructed and arranged," "adapted," and the like, whatever other objections may be made to them, can not properly be held to be badges of objectionable functionality.

It is the writer's opinion that rejections on the broad ground of functionality, as well as those on the grounds of aggregation, unpatentable combination and the like, should give place to a particular analysis of the claim and a statement of specific reasons why it is believed that the claim fails to point out an inventive act. While the terms aggregation, unpatentable combination and the like are believed to be proper and useful in crystallizing the reasons for the rejection, they should never be permitted to usurp the office of the latter.

Function vs. Method.

It often occurs, particularly in electrical cases, that a combination may not necessarily be concerned with the specific construction of *any* of its elements but merely with the range of equivalents of each and therefore each element would be defined as means for performing its peculiar function or result in the combination. Claims of this character have been previously noted in connection with the *Steinmetz*, *Creveling* and similar cases. Such a claim declares that it is immaterial what partic-

ular means among many equivalents is employed in the performance of each stated function or result, nor does the claim set up any cooperative relationship between the several means save the relationship between the results produced. But this is exactly the characteristic of a method, namely, that it is concerned with the sequence of acts or steps performed, rather than with the particular means whereby they are effected. So far as the claim in its apparatus form is concerned it would in effect be a claim for all mechanisms having the stated number of means for performing the method. There is no invention, broadly, in the mere abstract number of means employed in performing a method and one may not claim all means for performing it. He may dominate (not claim) all means only if he has invented a method performed by them all. To repeat the words of the court in the *Telephone Cases, supra*—

> "Others may compete with him for ways (mechanisms) of giving effect to the discovery; but the new art (method) he has found will belong to him and those claiming under him during the life of his patent."

Since, in our assumed claim no invention in particular mechanism is set up it would appear that the invention is more properly expressed as a method than as apparatus.

Method in Apparatus Claims.

Double Patenting.

Pursuing our analysis further, since an element functionally limited is not concerned with the particular means employed for performing the function or result stated, but dominates all means (equivalents) for performing it—and accordingly is in effect the equivalent of a step in a method, so an apparatus claim involving one or more elements, functionally limited, partakes both of the nature of method and apparatus. Accordingly these two statutory classes merge into each other by imperceptible steps and like the ancient problem as to when the addition of grains of sand to a nucleus makes it a pile, it is sometimes difficult to determine where one ends and the other begins. While our former example of

the method which, first conceived, led to the subsequent invention of motors of several different types, would illustrate the fact that method and apparatus are, or may be, independent concepts, nevertheless the difference is one of scope or breadth, as is most apparent in considering the all-means claim as the common factor between method and apparatus; and it is usually held by the decisions bearing on double patenting that claims that differ in scope only, can not sustain different patents. Particularly is this true where the method and apparatus are predicated upon the disclosure of a single instrumentality. Under the present interpretation of the patent law, therefore, as heretofore noted, it would appear unwise to seek protection of method and apparatus of this character in separate patents. Where, however, the method is taught to be performable by other known means or by hand, necessity for joinder is not apparent.

This practice is believed to be founded in justice and reason, for one is not entitled to a patent for his method, nor indeed is his method complete, until he has taught how to practice it. In return for both of these a monopoly of 17 years is granted. Now if applicant has disclosed only one means or mechanism for performing the method, and no other way to perform the method is obvious, to grant a separate monopoly for an additional period on that mechanism, assuming it also to be patentable, would be in effect to deprive the public of the free use of the complete method after the patent thereon had expired. This would be contrary to public policy and subversive of the plain intent of the statutes.

Analogy to Genus and Species Claims in Apparatus Cases.

There is believed to be a close analogy in the case of genus and species in apparatus cases. If an inventor discloses only a single species, his broad claims to the genus must be made in the same application with claims limited to that particular species, notwithstanding that as a mental concept the genus is not dependent upon that species but might be predicated upon other species as well. His broad expression of invention contained in claims to the genus is, however, not complete or patentable until he has taught some way of giving effect thereto. When he

discloses only a single species he has given to the public only *one complete invention, one practical means,* of all those dominated by the broad claims, for practicing the latter. He is accordingly entitled to one monopoly only for genus and species. Otherwise when the patent containing his genus claims had expired, the public would be unable freely to practice according to the teachings of these claims because of the continuing monopoly on the only known means for giving them effect. Moreover, the principle would not appear to be different where several patentable species were disclosed, for if the monopoly on at least one species is not released when the patent containing the genus claims expires, the public will be in possession of no known means for freely practicing the patent.

It would appear to follow that both in the case of genus claims to apparatus and claims to a method for the performance of which particular mechanism is essential, there must be the surrender of at least one disclosed means for giving them effect, coincident with the expiration of the patents covering them. Other disclosed means may, of course, properly constitute the subject-matter of separate patents.

Apparatus in Method Claims.

Method claims containing limitations to apparatus for performing one or more of their steps are occasionally met with. Frequently such claims are objected to on the broad ground that it is improper to limit a method claim by reference to apparatus. While a method is usually independent of any particular means for performing it, it is not believed that this need always be the case. The true test of the propriety of such limitation is thought to be—is the apparatus as defined essential to the performance of a step or steps of the method, does it bear a necessary cooperative relationship thereto. If it is not essential (or does not bear such relationship) then its inclusion is improper for the same reason that the inclusion of a specific subcombination in an apparatus claim is improper where such subcombination bears no new cooperative relationship to the other elements of the combination—that is, it is immaterial to the invention.

It is believed that in many cases in the past where only a single embodiment of the invention was disclosed, an unduly sharp line has been drawn between method and apparatus, due possibly to the influence of their separate classification by the statutes, and as a result, patents and claims have each been unduly multiplied. The spirit of the invention was lost in the controversy as to the form in which it should be expressed. The courts are believed to be justified in exercising a certain degree of liberality in such cases, as in the *Century* case, *supra*. Where, however, separate patents for method and apparatus, based on the same disclosure, are taken out, the careful attorney will see to it that both are granted on the same date.

Merit of German Claim and of Our Function and Method.

There is believed to be much merit in the German type of claim which first gives the structural setting for the invention and straightway jumps to the very essence of the inventive act usually by functional statement, avoiding the repetition of the real invention in its multitudinous relations to all the incidental parts and features by accident associated therewith, which usually fall well within the realm of mechanical skill. It is for a similar reason that the writer would emphasize the value of functional limitations and the method form of claims in our practice. For, while the apparatus is the material body of invention, method is its soul.

We may summarize the conclusions deduced from our consideration of claims, as follows:

(1) The mere substitution of an element or subcombination whether it be new or old, or, structurally or functionally defined, for its recognized *obvious* equivalent, in an old combination is not patentable (unpatentable combination).

(2) If the elements or subcombinations, structurally or functionally defined, bear a new and *unobvious* cooperative relationship to each other, the combination is patentable.

(3) If the substitution of an element or subcombination, structurally or functionally defined, for another, in an old combination produces a new

and *unobvious* result, whether or not it also produces the known result, the combination is patentable.

(4) Where the sole invention resides in the subcombination it should not be claimed in combination.

(5) Functionally limited elements in combination are subject to the same rules of patentability as structurally limited elements.

(6) A claim consisting of a plurality of means functionally limited is not substantially different from a method claim involving steps corresponding to the functional limitations.

(7) Method and apparatus claims based on the disclosure of a single instrumentality should be presented in the same case.

(8) Reference to apparatus in method claims is objectionable where not essential to the performance of a step or steps of the method.

Unobvious Substitution of Equivalents.

As a corollary to the first rule it would appear that if the substitution of an element for its equivalent (as appears after the event) in an old combination was *not obvious* before the substitution was made, as where the substituted element was borrowed from a non-analogous or remote art, or if, in the combination, it possesses an advantage even only in degree and not in kind which might have been expected had the element been particularly considered, yet one which it had not occurred to any one to avail himself of, though possibly turning an impractical device into a practical one or failure into success, then such substitution may be patentable (*Miehle Printing Press & Mfg. Co. vs. Whitlock Printing Press Co.*, 223 F. R., 647; 1915 C. D., 284; 218 O. G., 1155).

Some may dispute this view but in the writer's opinion patentable cases of the character indicated occasionally arise, and it is believed that no rule of practice should be permitted to deny protection to one who has performed an inventive act, the final test of which is believed to be—*was the thing he did or the particular advantages flowing*

therefrom unobvious to those skilled in the art before he did it.

For invention is a mental act, not a physical one. There is no yardstick by which it can be measured. It can only be determined by a comparison of what was actually done, with what might have been expected of one skilled in the art before the suggestion was made. Opinion as to invention in a particular case will vary with the technical ability and experience of each individual as well as with his judicial capacity. In order to place the judicial tribunals as nearly as possible in the position of the expert it is particularly desirable to give as full and complete citation of the art as possible in so far as it relates to the case in hand.

Invention in Idea.

Invention frequently resides rather in the *idea* that the changes over the prior art can be *advantageously* made than in the actual making of them, the necessary alterations of former devices often being obvious after the suggestion of the idea (*Hobbs vs. Beach,* 180 U. S., 383; 1901 C. D., 311; *Miehle Printing Press Mfg. Co. vs. Whitlock, supra*). It is of course only the practical device embodying the *inventive idea* which is patentable, since an abstract idea is not.

An invention may be likened to a cut-up picture puzzle. It is much more obvious how to put the parts together after we are given a picture of the result than it is before. So in combining references it would appear that ordinarily the test of anticipation should not be—could an expert after seeing the invention, and without invention on his own part, assemble the parts of certain specially selected references in the manner taught by the invention undergoing test, but rather, *would the expert without knowledge of the invention and without exercise of invention be led to make the selection of the particular references from the entire art and combine them in the manner of the invention, were there need of such device.* The general rule that the inventive idea of the whole combination should "ordinarily" be disclosed in a single reference is well stated in *ex parte McCollum,* 1914 C. D., 70; 204 O. G., 1346. It is perfectly conceivable, however, that a new combination may not mark a sufficient advance

over the suggestions contained in a plurality of devices in the prior art to rise to the dignity of invention, even though no single reference discloses the whole combination. Such cases nevertheless are believed to be rare.

Next to a requirement for division a rejection is the easiest action to give, and a well advised-allowance, the hardest. Nothing is more hurtful to the cause of good practice than the wrongful and ill-advised application of principles. In rejecting claims whether on references or on some more technical ground we must be careful to avoid the error of reasoning illustrated in the old conundrum, "Why is a rotten potato like a beehive?", the answer being, "A rotten potato is a specked tater, a spectator is a beholder, and a bee-holder is a bee-hive." Such may be aptly termed "rotten potato reasoning." The rule is the means, not the end. The application of no rule should be permitted to deprive an inventor of the fruits of a meritorious invention; but rather had we heed the wisdom of Uncle Rastus, who said, "You can lay down no fixed rule of conduct in this life. Sampson got killed because he had his hair cut, and Absalom got killed because he didn't."

While the rule properly construed may not be wrong, we may be wrong in our application of it, for it is easier to state rules and principles than to know whether or not they apply to a particular case in hand.

In connection with our general discussion of rules governing the construction of claims, certain illustrative decisions in electrical cases are of interest.

Degree Patentable Where New Result.

In the celebrated Stanley transformer case (*Westinghouse Co. vs. Montgomery*, 153 F. R., 890; 156 F. R., 582, and other decisions therein cited) it was held that the essence of the invention was the length of wire in the primary coil, that it was not necessary or possible to state that length in feet or inches and that admitting that Zipernowski and Deri had invented a transformer involving the same length of primary wire, their failure to disclose the fact that the regulation of this length was the simple method of obtaining the result desired voided their work as an anticipation. To avail himself of the benefit of such

invention, however, it was pointed out that the disclosure by an applicant must be so full and complete as to enable the invention to be readily practiced by those skilled in the art.

D. C. Apparatus Used on A. C.

It is generally true that it involves no invention to adapt direct current apparatus for use on alternating current, since such adaptation involves only well-known matters of design and engineering knowledge. But in the case of *Pieper vs. S. S. White Dental Mfg. Co., supra,* it was held that where a system of motor control was old in the d. c. art but the teaching of the prior art pointed away from the use of motors having the particular characteristics of construction involved therein, because of inefficiency, there was invention in adapting such system for operation on alternating current in which use it supplied a long-felt want in a manner which before had not been obvious.

Wire and Carbon Pile Rheostats Equivalents.

In the *Safety Car Heating & Lighting Co. vs. U. S. Light & Heating Co.,* 222 F. R., 320, the equivalence of wire rheostats and carbon pile rheostats in car lighting systems is recognized in view of their established equivalency in other relations, notwithstanding advantages possessed by the carbon pile in car lighting systems.

Subcombination Not Protected by Combination Claims.

The importance of the subcombination claim as a means of obtaining maximum protection commensurate with the scope of the invention and the fact that such protection may be lost by asserting only combination claims or by including non-essential elements is well illustrated in the case of *Bullock Electric & Mfg. Co. vs. Westinghouse,* 129 F. R., 105, involving the Tesla patents Nos. 381,968, 382,279, and 382,280. The first two patents claimed an induction motor of novel construction in combination with an appropriate source of supply, while the last patent covered the method of transmitting power, performed by the motor. Notwithstanding that it held three

patents designed to cover the invention, the assignee of these patents was precluded from holding as an infringer one who manufactured the motor and shipped it for use abroad, for the latter was held to infringe neither the combination claims to a system including the motor and a source of supply which he did not manufacture in its entirety, nor the method claimed, which he did not perform. The court said:

> "It may be true as claimed that the Tesla motor constitutes the real essence of the three Tesla inventions covered by the claims of the patents in point. Tesla, however, neglected to claim the motor as a separate device. He deliberately elected to claim it only as he claimed the other elements of his combination claimed and thereby abandoned any claim to its novelty or to a monopoly of its use except as a part of one or other of his combination claims."

Instances could be multiplied indefinitely of cases where the applicant had failed to see or to protect his real invention though asserting a multiplicity of applications and claims to a varied assortment of alleged combinations of elements which he had disclosed. In a recent case an applicant presented claims to a variety of alleged combinations and subcombinations of elements, each to a great extent incomplete and incapable of producing any unitary result, but all associated with the supply line, until his claims resembled a clothes line wih the family wash hung on it. Indeed, they did not possess all of the cooperative features of the latter.

We who are employed within the Office are too seldom brought face to face with the evil effects in the commercial world and in litigation of poorly drafted claims, effects which have been forcefully pointed out in these talks by such able and experienced gentlemen as Judge Denison, Mr. Fish, Mr. Church, and the late Mr. McGill. It is true that the Office has occasion to observe the evil effects of such claims in a few of the cases in interference and classification work, but that is subsequent to the allowance of the case and such cases do not there-

after ordinarily come to the attention of the examiner who passed upon them. It is believed that a wide field of opportunity is open here for a closer cooperation between the attorney and the examiner, with the one end in view to secure better protection for patent property. This may to some extent be brought about by the discussion of particular cases by the applicant and the attorney, but it would appear that more far-reaching results might be accomplished by full and free discussions between attorneys and examiners meeting on the same terms with the interests of no particular case at stake.

October 5, 1916.

Mechanical Equivalents

A paper read March 11, 1913, before the Engineering Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1913

Mechanical Equivalents

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It may be said without doubt that in general the commercialization of inventions and of patent rights has done much to increase the value of patents and to standardize the values of patentable inventions.

The individual inventor of one or more inventions which he may have perfected, either by his genius or by his patience and perseverance, having secured protection by taking out patents on his inventions, seeks to interest capital in the development of his ideas. If the invention appears to be worthy of consideration, the services of a patent attorney are secured in order to determine the probable validity of the patents and the scope of the equivalents which they may be held to cover. If his patents are taken up for investigation by a corporation, the Mechanical Engineer first investigates the operativeness and desirability of the inventions in connection with the particular art under consideration. Subsequently the attorney investigates the patents for validity and probable scope of equivalents.

Again, suits for infringement may be brought upon the patents and again the attorney investigates the patents for validity and probable range of equivalents. It is, therefore, apparent that the scope of the mechanical equivalents covered by a patent is very important at every stage of the investigation.

HISTORY.

The doctrine of mechanical equivalents is one which has been in the process of development from an early date. The statute does not require equivalents to be stated in the specifications and claims of patents, nor

does it give protection for equivalents *as such* in its terms. The Rules of Practice make no mention of the use of the doctrine of equivalents for the guidance of the Patent Office in determining the question of patentability.

The patent act of 1790 made no requirement that the invention should be particularly claimed. It did require, however, that the "specification shall be so particular, and said model so exact, as not only to distinguish the invention or discovery from other things before known and used, but also to enable a workman or other person skilled in the art of manufacture, whereof it is a branch, or wherewith it may be nearly connected, to make, construct, or use the same to the end that the public may have the full benefit thereof, after the expiration of the patent term."

The act of 1793 required that the inventor should file in the office of the Secretary of State "a written description of his invention, and of the manner of using, or process of compounding the same, in such full, clear and exact terms, as to distinguish the same from all other things before known, and to enable any person skilled in the art or science of which it is a branch, or with which it is most nearly connected, to make, compound and use the same."

In the act of 1836 it was required that the inventor "shall particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery." This appears to be the first act in which a distinct claim was required.

The Consolidated Patent Act of 1870 (Sect. 26) contained the requirement similar to that of Section 4888, of the Revised Statutes, to the effect that the inventor "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery." The present requirements of Rule 37 first appeared in the eighth Revised Edition of the Rules of Practice, November 16, 1885.

Nothing indicative of an equivalent had been referred to in statutes or rules.

Walker in his first edition (1883) says: that "to define an equivalent is at present a weighty and difficult

undertaking. It is weighty because many rights of property now depend, and always will depend, upon the definition. It is difficult because the deliverances of the Supreme Court upon the subject are inharmonious, and because none of those deliverances is accompanied by elementary reasoning on the merits of the question."

Robinson (Vol. 1, Sect. 245) says in effect, that the rules which govern the immaterial diversities of inventions, taken together, constitute the "Doctrine of Equivalents."

As a uniform rule "one who claims and secures a patent for a new machine or combination thereby necessarily claims and secures a patent for every mechanical equivalent for that device or combination."

Kinlock Telephone Co. *vs.* Western Electric Co. (113 F., 652).

DEFINITION.

A general definition of the term "mechanical equivalents" must, therefore, be deduced from the interpretations which have been given to the term in the decided cases.

Age of the equivalent element. In a number of early decisions it was held that in order to be an equivalent the element must have been known at the date of the patent. The doctrine was first announced by Justice Clifford and was held in the cases of Seymour *vs.* Osborn (11 Wall., 556); Gould *vs.* Rees (15 Wall., 187); Gill *vs.* Wells (22 Wall., 31); Imhacuser *vs.* Buerk (17 O. G., 795); and other decisions. The cases of Mason *vs.* Graham (23 Wall., 275), and Potter *vs.* Stewart (18 Blatch., 563) (Blatchford, J.) among the early decisions held the opposite view.

This element of age although reiterated in a number of decisions, and stated by Robinson as being the only logical and scientific test, appears to have been almost universally ignored in reaching the conclusions of the courts.

When the equivalent element becomes known through the gradual development of human information the inventor would seem to be as much entitled to a portion

of that development in his patent as that the public should be entitled to the entire benefit thereof, eliminating the patent from consideration. This proposition would appear to be in accord with the principle that an inventor is entitled to all the uses to which his invention may be put no matter whether he knew of those uses or not. In Oehric *vs.* Horstmann (131 F., 478) and General Electric Co. *vs.* Winsted Gas Co. (110 F., 963), it was held that unless the equivalents are specifically disclaimed "all equivalents are covered by a patent whether the inventor thought of them or not." Also in Vrooman *vs.* Penhollow (179 F., 296) a patentee was held entitled to equivalents although they were not described in the specification.

The later decisions more distinctly negative the requirement of age as to the infringing element. Among these are:

McCormick Harvester Co. *vs.* Aultman (69 F., 386).
Gould Coupler Co. *vs.* Pratt (70 F., 627).
Read Holiday & Sons *vs.* Schmilze Berge (78 F., 496).
Edison El. L. Co. *vs.* Boston Incandescent Lamp Co. (69 O. G.), 245.

There are, however, a few later decisions which mention age as a condition precedent to constituting a proper equivalent. Among these is the case of Denning Co. *vs.* American Steel Co. (169 F., 793) referring to the ingredients of a compound.

"It is, therefore, safe," says Walker (4th Edition), "to define an equivalent as a thing which performs the same function and performs that function in substantially the same manner as the thing of which it is alleged to be an equivalent" (Sect. 354).

To this Robinson adds the requirement that the substitution of the equivalent must not in any manner vary the idea of means. Hobbie *vs.* Smith (27 F., 656); Adams *vs.* Bellair Stamping Co. (28 F., 360); Brighton *vs.* Wilson (18 F., 378); Dey Time Register Co. *vs.* Syracuse Time Register Co. (152 F., 440). That it must perform the same function is set forth in Piper *vs.* Shedd et al. (35 O. G., 256).

Turning now to some of the leading decisions in which definitions are discussed we find the following:

An equivalent in the law of patents is defined to be "an act or substance which is known in the arts as a proper substitute for some other act or substance, employed already as an element in an invention, whose substitution for that other act or substance does not in any manner vary the idea of means. It possesses three characteristics:

(1) It must be capable of performing the same office in the invention as the act or substance whose place it supplies.

(2) It must relate to the form of embodiment alone, and not affect in any degree the idea of means.

(3) It must have been known in the arts, at the date of the patent, as endowed with this capability." (1 Rob. Pat., Sec. 247). Duff Mfg. Co. *vs.* Forgie (59 F., 772).

This third characteristic as to the age of the equivalent has been discussed above.

"A mechanical equivalent which may be substituted for an omitted mechanical element in a combination claim is one that performs the same function by applying the same force to the same object through the same means and mode of application."

Hardison *vs.* Brinkman (156 F., 962).

The term "equivalents" has two meanings as used in patent cases. The one relates to the results that are produced, and the other to the mechanism by which those results are produced.

Johnson *vs.* Root (1 Fisher, 351).

The equivalency of construction relates in mechanics to similarity of means, functions and results.

Eames *vs.* Worcester Pol. Inst. (123 F., 67).

Mechanical devices are equivalents when skilful and experienced workmen know that one will produce the same result as another.

Johnson *vs.* Root (1 Fisher, 351), and May *vs.* Fond du Lac (27 F., 691).

"The substantial equivalent of a thing is, in the sense of the patent law, the same as the thing itself. Two devices which perform the same function in substantially the same way, and accomplish substantially the same result, are, therefore, the same, though they may differ in name or form."

Machine Co. *vs.* Murphy (97 U. S., 120).

The term "equivalent" means "equally good" when it refers to the ingredients of compositions of matter.

Tyler *vs.* Boston (7 Wallace, 330).

Primary and secondary inventions. In the various texts books it has been attempted in applying the doctrine of equivalents, to draw a line of distinction between primary or pioneer patents and secondary or improvement patents.

Thus: A *primary invention* is one which performs a function never performed by any earlier invention: Morley *vs.* Lancaster (129 U. S., 373); Celluloid *vs.* Mfg. Co. (44 F., 86); Norton *vs.* Jensen (49 F., 862); Nat'l. Reg. Co. *vs.* Am. R. Co. (53 F., 372); Boston L. Mach. Co. *vs.* Woodward (53 F., 481).

A *secondary invention* is one which performs a function previously performed by some earlier invention, but which performs that function in a substantially different way from any that precede it: Butz Co. *vs.* El. Co. (36 F., 192); Writing Mach. Co. *vs.* Book Ty. Co. (108 F., 629).

No clear line, however, has been found to exist between primary and secondary inventions.

To be entitled to the doctrine of equivalents, it is not essential that the patent shall be for a pioneer invention in the broad sense of that term. If the invention is one that marks a decided step in the art, and has proved of value to the public, the patentee will be entitled to the benefit of the rule of equivalents, though not in so liberal a degree as if his invention were of a primary character:

Bundy Mfg. Co. *vs.* Detroit T. Reg. Co. (94 F., 524).

But, when an invention is not a pioneer invention, the inventor is held to a rigid construction of his claims.

Wright *vs.* Yuengling (155 U. S., 47).

In the case of Kokomo Fence Mach. Co. *vs.* Kitselman (189 U. S., 8), it was attempted to decide the question as to whether the invention was a pioneer or a secondary one, in a suit on several patents covering wire fabric machines.

The Circuit Court held the patents to cover *secondary inventions* and found non-infringement for the defendants. The Circuit Court of Appeals held one of the patents in suit to cover a *primary invention*, and found it to be infringed by the defendant's machine. The Supreme Court agreed with the Circuit Court, finding that the invention was a secondary one and the defendants not entitled to recover.

Many decisions enunciate the proposition that the doctrine applies equally to all inventions.

The term "mechanical equivalent" has a broad and generous signification in the interpretation of a pioneer patent, a very narrow and restricted meaning in the construction of a patent for a slight improvement, and in the interpretation of patents for the great mass of inventions which fall between these extremes, its meaning is proportioned to the advance which the invention under consideration evidences.

Mallon *vs.* Wm. C. Gregg Co. (137 F., 68).

PRIMARY INVENTIONS ENTITLED TO A BROAD RANGE OF EQUIVALENTS.

To sustain a claim of infringement of a patented machine, three things must be found: First, identity of result; second, identity of means; third, identity of operation. The fact that an invention is of a primary character does not entitle the patentee to all means for accomplishing the same result.

Am. Can Co. *vs.* H. S. Canning Co. (137 F., 86).

The patentee of an invention which, although for an improvement only, is of undoubted utility and constitutes a marked advance in the art, is entitled to the benefit of the doctrine of equivalents commensurate with the invention disclosed.

Columbia Wire Co. *vs.* Kokomo S. & W. Co. (143 F., 116).

The decisions that an element included in a claim can not be regarded as immaterial were not intended to exclude from consideration the doctrine of mechanical equivalents. An element can not be held to be immaterial where there is no corresponding element in the other party's claim; but where there is a corresponding element the question whether they are mechanical equivalents must be determined.

Ex parte Thompson (98 O. G., 227).

An improver may be a pioneer in a limited field.

Howe Mach. Co. *vs.* Coffield Motor Washer Co. (197 F., 541).

To what liberality of construction these claims are entitled depends to a certain extent upon the character of the invention, and whether it is what is termed in ordinary parlance a "pioneer." This word, although used somewhat loosely, is commonly understood to denote a patent covering a function never before performed, a wholly novel device, or one of such novelty and importance as to mark a distinct step in the progress of the art, as distinguished from a mere improvement or perfection of what had gone before. Most conspicuous examples of such patents are: The one to Howe for the sewing machine; to Morse for the electric telegraph; and to Bell of the telephone.

Westinghouse *vs.* Boyden Power Brake Co. (170 U. S., 537).

The Welsbach patent No. 837,017, for "a pyrophoric alloy containing cerium alloyed with iron, as and for the purpose described." *Held,* to cover a poineer invention

and entitled to that liberal application of the doctrine of equivalents, which is usually accorded to such patents.

Freibacher Chemische Werke Gesellschaft mit beschrankter Haftung *vs.* The Roessler & Hasslacher Chemical Co. (209 O. G., 1689).

The words "substantially as described" in a claim do not limit the patentee to the exact mechanism described nor deprive him of the benefit of rule of equivalents to the same extent as if they were absent.

National Tube Co. *vs.* Mark et al. (216 F., 507).

IMPROVEMENT PATENTS ENTITLED TO A MORE LIMITED RANGE OF EQUIVALENTS.

"A patentee who is not a pioneer, but a mechanical improver, though the first to achieve commercial success is not entitled to treat as equivalents distinct mechanical improvements of others."

Mayo K. M. & N. Co. *vs.* Jencks (121 F., 110).

A patentee whose invention is meritorious, although he is not a pioneer, is entitled to a reasonable range of equivalents measured by the advance he has made over older machines.

Dowagiac Mfg. Co. *vs.* Minnesota M. Plow Co. (118 F., 136).

A patentee is not to be denied protection commensurate with the scope of his actual and distinctly described invention by wholly excluding him from the benefit of the doctrine of equivalents, even as against one who has made only such changes as are palpably colorable and of such character as to show that they were studied evasions of the particular devices described in the patent.

Lepper et al. *vs.* Randall (113 F., 627).

A patentee of an improvement on a prior combination by adding thereto a single new element is not entitled to claim equivalents to the same extent as the patentee of the original combination:

> Am. Stoker Co. *vs.* Underfeed Stoker Co. (182 F., 642).

When the invention of a patent is not a pioneer invention, the inventor is held to a rigid construction of his claims, and is not entitled to any considerable range of equivalents: and when, in a patent for a mere improvement, which in view of the prior art is extremely narrow, he has limited his claims by specific words to the specific form of device or element, he is bound thereby.

> Sharp *vs.* Bellinger et al. (168 F., 296).

PATENTS SHOULD BE LIMITED TO WHAT IS CLAIMED.

On the other hand the claims of a patent should be limited to the thing claimed. The claim is the written definition of the character and scope of the thing protected. Robinson says (Vol. II, Sec. 505):

> "The courts will not go into the history of the art to ascertain what he has really discovered and what he might have patented if he had chosen but will take him at his word and protect him according to the terms in which he has himself demanded such protection."

The statutory prerequisite to the claim has already been referred to. The applicant must—

> "particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery."

It is clearly necessary that the inventor afford information to the public as to precisely what he regards the limitations of his monopoly, otherwise the public would have no means of knowing the extent of existing monopolies, and from what portion of the field of invention the

inventor should exclude himself in the practice of his art.

The Supreme Court in the case of Pope Mfg. Co. *vs.* Gormully (144 U. S., 224) said:

> "The rights of the public to use that which can not be lawfully monopolized is just as important, and should be as jealously guarded, as the rights of a real inventor."

Among other decisions may be cited the following:

> "Where the actual invention, described in the specification is larger than the claims of the patent, patentee, in suit for infringement, is limited to what is specified in the claims."
>
> Bates *vs.* Coe (98 U. S., 38).

"Courts will go far to save a patent for a meritorious invention, but can not reconstruct claims and disregard their very terms, and add or subtract material words not found therein but necessary if the true invention is to be covered."

Sharp *vs.* Bellinger et al. (168 F., 295).

"The courts are bound by the language chosen by the inventor in framing his claims, and they have neither the right nor the power to enlarge a patent beyond the scope of the claims, even though the patentee may have been entitled to something more than the words he has chosen to use will include."

Seaburg *vs.* Johnson (76 F., 456).

A decision often quoted is:

> "The claim of the inventor in letters patent must be construed according to its terms, and when its import is plain, resort can not be had to the context for the purpose of enlarging it.
>
> "Some persons seem to suppose that a claim in a patent is like a nose of wax that may be turned and twisted in any direction by merely referring to the specification so as to make it include something more than or something different from what its words express."

> "The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law to construe it in a manner different from the plain import of its terms." See, Keystone Bridge Co. *vs.* Phoenix Iron Co. (95 U. S., 274); James *vs.* Campbell (104 U. S., 356).
>
> White *vs.* Dunbar (119 U. S., 47).

From the principles laid down in these decisions it is not seen how the doctrine of equivalents can be applied otherwise than both forwards and backwards. The claim is to be liberally construed but not so as to read anything into it or out of it to make it different from what a fair interpretation of its terms demand. The same tests should be applied in the determination of the question of anticipation as are applied to find infringement. It is a familiar rule, and often expressed, that a construction which would infringe if later would anticipate if earlier.

SCHROEDER PATENT—CRITICISM—PROPOSED LEGISLATION.

The efforts of the courts from time to time, in giving construction upon relatively broad patents, and in applying the doctrine of mechanical equivalents with such force as to make a finding for a pioneer invention, has called forth much adverse criticism on the part of the public. It has been alleged that the doctrine of equivalents has been used as a veil under which the courts have decided cases at random and without the application of the equitable principles laid down in the decisions noted.

One instance of a case calling forth such adverse criticism is found in the washing machine art. The patent to Schroeder 535,465, March 12, 1895, was construed in the case of Benbow-Brammer Mfg. Co. *vs.* Straus (166 F., 114). This patent discloses a slidable cylinder mounted on a vertical shaft to which shaft at the lower end is attached the clothes stirrer. A segmental

rack on the cylinder is engaged by a pinion mounted on the inner end of a driving shaft, to the outer end of which is attached the crank-handle or fly-wheel. The claim sued on called for a cylinder placed upon the operating shaft and having *a sliding movement thereon.*

"*The main difference between the two is that in* Schroeder's machine the reciprocating motion is produced by the up and down movement of the rack and in the defendant's by the up and down movement of the pinion. This change is accomplished by substituting for the driving shaft of the claim a driving shaft which as the defendant's brief asserts, is well known in mechanics as a 'floating' shaft, and making the necessary mechanical changes incident to the substitution."

Washing machines having the general combination of parts were old prior to the date of the application for the Schroeder patent. The decision of the court, therefore, related to the particular form of mechanism for producing the reciprocatory rotary motion of the clothes stirrer.

Under the above state of facts it has been alleged that the Schroeder patent should not have been enlarged beyond the scope of its claims, and that the doctrine of mechanical equivalents should not have been used as a "mask" under which the court should hold that a claim in the patent which, by its *terms* is limited to a *slidable cylinder*, is infringed by a device embodying a *non-slidable cylinder.*

In view of the decision in the case of Benbow-Brammer Mfg. Co. *vs.* Straus, supra, and other cases of like import, the following statute was proposed for enactment, by Hugh K. Wagner of St. Louis, Mo.:

> "Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that it shall be unlawful for any court in construing any claim of letters-patent for an invention to hold, under the doctrine of mechanical equivalents or otherwise, as an infringement thereof anything on which the terms of such claim understood according to their plain import will not read."

THE COMBINATION.

In applying the doctrine of equivalents, a distinction is made between inventions which are specific devices and inventions which are combinations.

In specific devices, the range of equivalents recognized is much wider than in combinations. In the latter an element is not an equivalent, unless it is substantially the same thing as the patentee has described, operating in the same way.

Wells *vs.* Curtis (66 F., 318) C. C. A., 6th C.

The fact that in a combination all the elements are old does not preclude the benefit of equivalents.

Singer Co. *vs.* Cramer (109 F., 652).

Any substitution in the essential elements of a combination which affects either the means or function of the single element passes beyond the region of equivalents into the sphere of substantive invention (1 Rob., 347).

The doctrine of mechanical equivalents is governed by the same rules and has the same application in a case in which the infringement of a patent for a combination is in question as in cases where the issues are over the infringement of patents for machines or compositions of matter.

Ottumwa Box Car Loader Co. *vs.* Christy Box Car Loader Co. (215 F., 362).

The Substitution of Equivalents in General Combinations.

This question relates more definitely to secondary inventions and improvement patents since such inventions and patents bring out more specifically applicant's exact combinations and arrangements of elements in connection with general elements of some particular art.

Under this head may be classified the famous McNeil decisions (100 O. G., 1976, 100 O. G., 2178) undoubtedly used to excess:

"The combination of a trimmer with one type of stitch-forming mechanism being old, there is no

> invention in combining that trimmer with another stitch-forming mechanism whether that stitch-forming mechanism is new or old."

This decision is used in variation with *In re* Hawley (121 O. G., 691) and *In re* Ratican (162 O. G., 540). The latter held that—

> "the inventor is certainly not entitled to a patent on a new combination merely because he has improved a single element of that combination."

Where the new combination involves one invention, and the improved element covers an invention of a second party, not structurally dependent, no third patent should be granted that would prevent these independent inventors from bringing their separate inventions together.

On the other hand, in the early state of an art, the substitution of equivalents in general combinations may amount to invention. The decisions in the case of the Selden patent was such a holding, the steam engine being held not to be the equivalent of the gas engine in the combination.

> El. Vehicle Co. *vs.* C. A. Duerr & Co. (172 F., 923).

Also, if the new element co-acts with the other elements in a different manner than in the old combination, *In re* McNeil does not apply.

> *Ex parte* Mumford (206 O. G., 878).

DOUBLE USE.

The revolving rack for billiard cues was held void on the ground of double use. St. Germain *vs.* Brunswick (51 O. G., 1129). In this case the revolving dining table and the bottle caster were held to be equivalent structures for bringing around the desired article for use.

In the case of The Penn. R. R. Co. *vs.* The Loco. Engine Safety Truck Co. (27 O. G., 207), and in many other cases, it has been held that—

> "the application of an old process or machine to a similar or analogous subject, with no change in the

manner of applying it, and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated."

In this case a form of truck already in use on railroad cars was held to have its equivalent in a similar truck for use as the forward truck of a locomotive engine.

Many other cases of similar import might be cited.

ABANDONMENT.

The mere fact that a claim has been rejected and amended does not operate as an abandonment of equivalent elements.

Reece Button Hole Mech. Co. *vs.* Globe Co. (61 F., 958).

Where three equivalents are described and but one of them is claimed, applicant does not thereby *abandon* the other two ways.

Burdon Wire & Supply Co. *vs.* Williams (128 F., 927).

The mention of an equivalent form or method to that stated in the claim does not *abandon* the equivalent.

Thompson-Houston El. Co. *vs.* Ohio Brass Co. (130 F., 542).

DESIGNS.

"Design patents cover appearances only."
Royal Metal Mfg. Co. *vs.* Art Metal Works (128 F., 128).

"The true test of infringement of a design patent is laid down by the Supreme Court in Gorham Co. *vs.* White (14 Wall., 528) as follows:

"If, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer,

inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other."

N. Y. Belting & Packing Co. *vs.* N. J. Car Spring & Rubber Co. (53 F., 810).
Macbeth et al. *vs.* Gillinder et al. (54 F., 171).
Kruttschmitt *vs.* Simmons (118 F., 851).

MISCELLANEOUS.

In Ex parte Dolph (39 O. G., 239) it was held that the words "or equivalent devices" should not be employed in a claim unless such equivalent devices are clearly described in the specification. Since equivalent devices are always regarded as being covered by a claim, these words are unnecessary in any case and in most cases render the claim indefinite.

Where reference letters are used on drawings the same letters should not be used to designate equivalent elements. The use of letters provided with exponents was suggested in Ex parte Cook (51 O. G., 1620).

The application of the doctrine of equivalents by the Examiners to the work of the office, in addition to a consideration of the rules as enunciated in the definitions depends to some extent upon the training of the individual Examiner. The mechanical engineer who has had the benefit of training in shop work and design will find it more difficult to see invention in differences of form, size, capacity, and proportions and in arrangements of parts than the Examiner who has not had the benefit of such training. The arguments and demonstrations of the attorneys in such cases, are, as a rule, less easily convincing. Likewise the skilled chemist will appreciate more quickly the equivalency of ingredients in any given compound than one not skilled in that profession.

"A mere mechanical substitute for a thing must be regarded as the thing itself."

The question whether the thing is an equivalent or not is a question of *fact* to be determined by the evidence.

"Whether the defendant has used substantially the same means, or, in other words, mechanical

equivalents, to accomplish the same result, is a question for the jury to determine."

"The testimony of a mechanical expert, in a suit for infringement, must be tried by the same tests that are applied to the evidence of other witnesses; and it must receive just such credit and weight as it appears to be entitled to from all the circumstances, and no more."

May *vs.* County of Fond du Lac (27 F., 691).

In applying references in anticipation of claims, therefore, the Examiner should be guided by the same judicial considerations in favor of the public as are given to the protection of alleged inventions in the claims allowed, at the same time bearing in mind that in the presence of a reasonable doubt the benefit thereof should be given to the inventor.

In order to give a clearer understanding of the application of equivalents, and to express in concrete form the scope which has been given to the doctrine by the Federal courts, I have made a selection of a few *specific cases* and arranged them somewhat in the form of a digest. The selection of these cases has been made with a view to clear illustration of the application of the doctrine.

DIGEST OF SPECIFIC CASES.

Elements.

Cams.

In a sewing machine combination:

"While a *cam* and a *wedge* are regarded as plain equivalents (Burr *vs.* Duryee, 1 Wall., 531), yet the use of *two cams* in the defendant's device, in place of *two inclines* or *wedges* in the plaintiff's patent, are *not* to be regarded as the substitution of equivalents, considering their different modes of operation in connection with the rods as arranged in the defendant's machine."

Gray *vs.* Bangs (31 F., 342).

Bearings.

In a journal bearing for stone crushers, a *cylindrical* journal-bearing provided with a *conical journal obliquely placed,* so that the surfaces of the two have a line of contact, is infringed by the equivalent structure of a *conical bearing* and a *cylindrical journal* similarly placed. The first named bearing was held patentable over a ball and socket bearing in which there is but a point of contact.

Gates Iron Works *vs.* Fraser & Chalmers (79 O. G., 2015).

In a treadle for sewing machines, *knife edge trunnion* bearings are the equivalent of *center point bearings* consisting of pointed screws engaging in holes countersunk in the treadle.

Singer Mfg. Co. *vs.* Cramer (97 O. G., 552).

In a hair clipping machine, a *ball bearing* is the equivalent of a *roller bearing* as an antifriction device between the reciprocating cutter plates and the cap. Grass and grain cutters were considered to be cutters for an equivalent use.

Coats *vs.* Boker (119 F., 358).

Fastening Devices.

The use of a *screw* to fasten together two parts, instead of a *rivet,* for the purpose of making them more readily detachable, is but the substitution of a well-known mechanical equivalent.

The rivet made a "permanent structure" of the hook with the plate of the corn-husker, while the screw rendered the parts detachable.

Boss Mfg. Co. *vs.* Thomas (162 O. G., 1183).

The construction of a school desk or seat having slats keyed to the frames with *square keys* is *not* a reduction to practice of an invention for fastening the slats to the frames with *dovetail keys.* However, the *dovetail key* is the equivalent of a *dowel.*

Mallett *vs.* Cogger (16 O. G., 45).

Gearing.

In a knitting machine, a *pin and slot connection* is the equivalent of a *geared connection* between the crank shaft and the second shaft.

McMichael & Wildman Mfg. Co. *vs.* Ruth et al. (128 F., 706).

In actuating mechanism for door bells a *half wheel* or *sector gear* is the equivalent of a *pinion.*

New Departure Mfg. Co. *vs.* Sargent & Co. (127 F., 152).

A *sprocket chain drive* is the equivalent of a *belt* drive as a means for propelling a vehicle.

Sheffield Car Co. *vs.* Buda Foundry & Mfg. Co. (177 F., 713).

A driven friction pulley in engagement with the *side edges of a driving pulley* is not the equivalent of a *driven pulley* in engagement with *periphery of the driving pulley.*

Motsinger Device Mfg. Co. *vs.* Hendricks Novelty Co. (149 F., 995).

Levers.

In the cornplanter cases, a *handle* for moving the connecting rod backward and forward between the hoppers was held the equivalent of a *lever* for performing the same functions.

Brown *vs.* Guild (23 Wallace, 181).

In safety switches for railroad drawbridges: "A rod is the known equivalent of an endless chain where it can be used for the same purpose and effect."

Spain et al. *vs.* Gamble et al. (Fed Cases, 13199).

In a device for actuating the movable jaw of a stone crusher, a *column of water* moved by a pump plunger was held to be the equivalent of a *mechanical lever mechanism* for actuating the movable jaw.

Blake *vs.* Robertson (94 U. S., 728).

Pulleys.

In a mounting for belt pulleys a *pulley revolving on a shaft* is the equivalent of a *pulley having trunnions* revolving in bearings at the ends.

Robins Conveying Belt Co. *vs.* Am. Road Mach. Co., (142 F., 221).
Robins Conveying Belt Co. *vs.* Am. Road Mach. Co. (145 F., 923).

Racks and Pinions.

In a mechanism for shifting car seats, a *rack and pinion movement* for shifting the seat held *not* the equivalent of downwardly extending *pivoted arms* for the same purpose.

Hale & Kilburn Mfg. Co. *vs.* Oneonta et al. (129 F., 598).

Springs and Weights.

In a weighted vent valve, a weight is the equivalent of a *spring.* The interchangeable use of weights and springs is stated as being the stock illustration for equivalents.

Kenney Mfg. Co. *vs.* J. L. Mott Iron Works (137 F., 431).

In the fountain pen combination the *spring* was found to be more than the equivalent of a *weight.* The spring acted more quickly in the direction of the point of the pen without regard to its perpendicularity.

Cross *vs.* Mackinnon (11 F., 601).

"A *weight* and a *spring*, generally speaking, are mechanical equivalents." *Levers* and *springs* are generally equivalents. Interchangeability is an important test in determining infringement. Miller *vs.* Eagle Mfg. Co. (151 U. S., 186). A *spiral spring* is generally an equivalent for a *flat spring.* United States *vs.* Berdan Firearms Co. (156 U. S., 552).

L. J. Mueller Furnace Co. *vs.* Groesdhel (166 F., 917).

Miscellaneous.

In a circuit breaker a spring substituted for a pivot where it performs the same movement and does the same work is an equivalent.

> "I think it clear that a spring is as much of an equivalent for a pivot as is a rod for an endless chain, or a spring for a weight. The question is do they produce the same effect, perform the same function?"

Westinghouse El. & Mfg. Co. *vs.* Condit El. Mfg. Co. (159 F., 144).

Also, on appeal it was held that "the spring must be treated as an equivalent for the pivot" (167 F., 546).

Ropes or *strings* either *saturated with oil or not* are the equivalents of wires or *chains having fusible links* to be ruptured in case of fire. The substitution of one for the other was held to be purely mechanical, such as would occur to any ordinary mechanic.

Voightman *vs.* Weis Ridge Cornice Co. (133 F., 298).

In a circuit closing apparatus, a *weight* is the equivalent of a solenoid, as an actuating mechanism for a lever.

Reis et al. *vs.* Barth Mfg. Co. (136 F., 850).

In a device for supporting and delivering paper for wrapping and binding purposes, the *serrated edge* is the mechanical equivalent for the knife and the *sponge* is the equivalent for the moistening roller.

Natl. Binding Mach. Co. *vs.* J. D. McLaurin Co. (186 F., 992).

Articles of Manufacture.

A device for admitting air to the lower part of a flame of a lamp through many small holes is a mechanical equivalent of one admitting it through larger apertures, one on each side of the wick chamber.

Ex parte Dietz (Fed. Cases No. 3902).

In a syringe, the *bulb placed above* the *axial line* of the delivery and discharge is the equivalent of the *bulb* placed *directly in axial line* of the tubes.

Morey *vs.* Lockwood (8 Wallace, 230).

In golf balls having rubber cores, a *rubber thread* wound under high tension is the equivalent of a *rubber band* wound under tension. The term "rubber thread" held not limited to a compound cord made by twisting together two or more strands, but includes any strip of rubber of whatever shape.

Haskell Golf Ball Co. *vs.* Perfect Golf Ball Co. (143 F., 128).

Machines.

In a coffee-mill structure, a hopper and *grinding*-shell formed in a single piece is the equivalent of a structure in which said parts are made *separate* and *securely* and firmly united by *flanges*, *lugs* and *pins*.

Strobridge *vs.* Lindsay, Sterritt & Co. (6 F., 510).

In a reheating furnace for glassware, a *horizontally* revolving table supporting vertical rods and carrying the articles to be heated, and which by its revolution, carries them through the furnace in the arc of a circle, does not have its equivalent in a mechanism in which the carrier is an *endless chain* moving through the furnace in a straight line, and mounted on a movable frame so that the whole may be withdrawn from the furnace.

Natl. Glass Co. *vs.* U. S. Glass Co. (147 F., 254).

Machine Motors.

An *air motor* held not the equivalent of a *water motor* where the advantage of the air motor was not foreseen.

Weld Mfg. Co. *vs.* Johnson Service Co. (147 F., 234).

The coupling of a motor that will run any kind of a machine, to a machine that will run with any kind of a

motor, is not invention. A *pneumatic motor* was held to be the equivalent of an *electric motor* in the operation of automatic dampers. "We can not," says the court, "put the claims in the so-called 'happy thought' class. If in truth a burst of inspiration points to the running of A's machine with B's engine, nevertheless a monopoly can not be based merely on bringing the two together."

Natl. Regulator Co. *vs.* Powers Regulator Co. (160 F., 460).

A *constant volume gas engine* is not the equivalent of a *constant pressure engine,* under a patent entitled to a fair and reasonable, but not a broad range of equivalents.

The Otto four-cycle engine not the equivalent of the Brayton or Selden two-cycle engine in the combination.

Columbia Motor Car Co. *vs.* C. A. Duerr & Co. (184 F., 893).

In electric motor regulation, an *inductive resistance* coil in which a resistance is due to counter electromotive force induced within the coil is the equivalent of a *coil* which causes only *natural* or *ohmic resistance,* the two kinds of resistance coils being well known.

Pieper et al. *vs.* Electro Dental Mfg. Co. (156 F., 672).

In an alternating current motor, a *rotating armature around a stationary field magnet* is the equivalent of a *rotating armature within a stationary field magnet.*

Century El. Co. *vs.* Westinghouse El. & Mfg. Co. (191 F., 350).

Ingredients.

Powdered asbestos is the equivalent of *powdered soapstone* as a lubricant for electrical packings, where the powdered asbestos was accepted by the user as answering every purpose of electrical insulation.

Pratt & Johns *vs.* Thomson (72 O. G., 1347).

Acetone or *ketone* held to be the chemical equivalent of an *alcoholic ingredient* in a paint and varnish remover. The authorities uniformly hold that the word "equivalent" as applied to a chemical action may mean a fluid which is "equally good" with that specified in the patent. Tyler *vs.* Boston (74 U. S., 327).

Chadeloid Chemical Co. *vs.* Frank S. DeRonde Co. (146 F., 988).

Nickel, Cobalt and Manganese held to be equivalents of iron when alloyed with cerium.

Freibacher Chemische Werke Gesellschaft mit beschrankter Haftung *vs.* The Roessler & Hasslacher Chemical Co. (209 O. G., 1689).

March 11, 1915.

Suggestions as to Methods of Shortening the Time Required to Finally Adjudicate Applications for Patents.

A paper read January 28, 1917, before the Examining Corps of the United States Patent Office

BY

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WASHINGTON, D. C.
1917.

Some Suggestions as to Methods of Shortening the Time Required to Finally Adjudicate Applications for Patents

By

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The subject of patent law has been described as covering a very limited portion of the field of general law. While not extensive, it is, gentlemen, as deep as a well.

It is believed to be generally recognized that there is no other branch of the law that requires a greater mentality, a wider knowledge, or greater skill and training.

The Examiner, who with the all too little time for each case, is able to apply this law with reasonable accuracy, to the multitude of different inventions, embraced in applications possessing a multitude of different imperfections and insufficiencies, and adjudicate the enormous number of claims required to mark the limits of the rights involved, must indeed possess a degree of skill, judgment and learning that is, to say the least, unusual. He must be at once judge, jury and counsel. He must determine the law, weigh the evidence, and combat and expose the fallacies in the arguments presented by the too zealous applicant. All this he must do with a maximum of speed, if the work before him is not to hopelessly accumulate.

It is the purpose of this paper to make some suggestions looking to the shortening of the time required to finally adjudicate the application. That every effort to this end is necessary is abundantly evidenced by the fact that steadily the number of applications filed each year has increased, and as steadily the time required to adjudicate each case has also increased, until now, the corps staggers under a load it is well nigh impossible to carry.

It is of little utility, perhaps, to discuss the reasons for this increase. It will be sufficient to merely note, in passing, that they are found in the fact that we are the most inventive people in the world; that our industrial and commercial supremacy is in a considerable measure due to this fact, and the steady increase in our population brings with it the natural increase in the number of applications filed each year. In 1840, there were 765 applications filed; in 1860, over 7,000; in 1880, 23,000: in 1900, 41,000; in 1913, 70,000. The examiners will, in the near future, be facing the stupendous task of examining a hundred thousand new cases a year.

Experience has shown that there is no such thing as an exhausted art.

Even where there are lulls in the advance of some of the arts, these are more than offset by the sudden activity in others, brought about by the invention of some radically new thing.

The invention of the wireless telegraph; of the successful flying machine; of the automobile, have resulted in a flood of applications for inventions in the nature of improvements and refinements, all having their bearing upon the creation of the eventually practical, commercial form of apparatus.

These pioneer inventions also bring about an increased activity in a large number of related arts.

A wireless telegraph station must have its source of high frequency current, its structural towers of great height, its special conductors of high insulation. In fact, these new conditions have brought about an increased activity in almost every branch of the electrical art.

A flying machine and an automobile must each have a gas engine, with its electric igniting means, its gas mixing apparatus, and its multitude of related devices pertaining to many mechanical and metallurgy arts. All these take on special designs and refinements incident to their new use, and bring their multitude of applications to the various divisions of the office having in charge the cases relating to these various arts.

The art that must be searched is increasing by leaps and bounds, and reclassification, imperative as it is,

and helpful as it is, can not solve this part of the problem, and is only a partial, though welcome, aid.

The complexity of the subject-matter of the applications is ever increasing. The fact that more and more of the complicated manual operations and processes are being accomplished by machinery, and that existing machinery is being more and more refined, made automatic, and made to do things requiring almost a human intelligence, with a minimum of supervision, brings about this result.

There has also grown up a class of people who are desirous of a patent of some sort, of any sort, who keep an application which is fairly anticipated before the Examiner as long as possible, hoping by some argument or shift, or amendment, to find some slight point on which to hang an allowable claim or to weary or argue the Examiner into allowing some sort of a claim, so that counsel may obtain his fee, or satisfy an uninformed client or a client who is indifferent to the validity of his patent but wishes to mark his device patented merely for the intimidating effect upon would-be rivals.

It is plain enough, therefore, that in the near future, the work of the examining corps will not grow less. The situation, as we are all aware, has resulted in the cases awaiting action reaching the somewhat startling number of over 25,000

There are several very cogent reasons why applications should be speedily brought to a final adjudication.

Applications long pending are a source of scandal and abuse. Often they do not embody the inventions in commercial form, they are kept pending in the office while others, ignorant of them, and therefore obtaining no aid from them, invent and produce successful devices, create a commercial value and status at great expense and risk, only to find that the owner of the long pending application has placed therein a claim dominating all that the later inventors have done, has issued the patent and by legal process lays tribute upon the labors and the rewards of the later innocent inventors. Such a proceeding is so repugnant to justice and equity that this office is warranted in doing all it can to prevent such applications from being kept pending during long periods.

Further, by removing the cause, legislation honestly intended to reach this class of cases, but also doing great harm to inventors whose applications are necessarily delayed in the office, will be rendered needless.

The long pendency of a large number of applications before the office, by consuming its time in reconsidering them over and over, renders the period before a new-application is reached for the first examination so long that the inventor frequently suffers great loss. The art may pass beyond his invention. He may lose his opportunity to sell. He dare not incur the expense incident to manufacture because of lack of protection. Having no indication of the attitude of the office his commercial interests, so far as that invention is concerned, are entirely halted.

The foregoing considerations are sufficient to show that the office has reached a condition that may be regarded as almost critical, and one that fully justifies it in adopting any means, not inconsistent with law and which will not injure the rights of inventors, that will enable the corps to reduce the number of times applications must be reconsidered, the period they may be kept pending, and the number awaiting action.

How is this to be done?

I shall not consider here possible future legislation, but will consider only what can be done with the means at hand.

The standard of work must be maintained. If the examination and adjudication of applications are to be worth while, are to possess any real value justifying the enormous cost involved, the work can not be slighted, Enough patents, more than enough, in spite of the best we can do, are declared invalid in whole or in part.

It is believed there is room for improvement in a conservation of energy.

I am reminded of a youth whom I knew in my younger days, who was wont to contest in foot races. When he was in full action, he had such a habit of waving his arms and moving his body up and down, that he had too little energy or time left for making progress forward. He always came in last. It has seemed possible the office sometimes progressed a little like this youth;

that it takes too many unnecessary actions, and the following suggestions are made, with a good deal of diffidence, in the hope that some economy of time and effort may be realized.

In the first examination of the application, if the action is to go to the merits, let it be a complete one.

In matters of form all objections should, so far as possible, be embodied in the first office letter, and be kept before the applicant in subsequent letters, if necessary, by simple reference to the first letter. This generally enables them to be all out of the way by the time the matters of merit are determined. I recall a letter received in a division in which I was an assistant many years ago, which read something like this: "The informalities and objections, which seem to increase in number with each reexamination of this case, have, we hope, all been cured."

Just a word here about formal objections. It is a well recognized fact that a great many are made that are subsequently waived. Bearing in mind the specification and drawing are addressed to those ordinarily skilled in the art, and they should be clear and understandable, yet as few formal objections should be made as is consistent with this ultimate end. Merely because the Examiner would state a matter differently, or could even state it better, were he writing the description, is no reason for requiring revision or change. If the matter is not incorrect, is not misleading, and the meaning of the inventor is plain, objection should, ordinarily, not be made. The Examiner should be sure his formal objections are really necessary. This saves time, argument and friction.

Before making a search for anticipatory art the application and the invention should be fully understood. It pays to take time to fully and completely comprehend the disclosure every time the case is acted upon. Then the first search should be as nearly complete as it is possible to make it. Not only the broadest and the narrowest claims should be held in mind in searching, but the invention, the thing itself, and its functions should be held in view. Where the invention is simple and fully comprehended a second search is rarely neces-

sary. In the more complex and extensive cases, however, second or even third searches are often necessary, it is true, but even here the gain of a complete search is proportionally great, and second searches will be proportionally fewer.

In regard to the search:

It is said all men are equal before the law. Some one has added, "this is true, however, only in theory." The same is true of claims.

A narrow claim limited to the precise embodiment of the invention disclosed is much less likely to be anticipated by anything found outside the class where the case belongs. A search on such a claim, therefore, should seldom be prosecuted beyond rather restricted limits.

Further, a narrow structural claim is seldom sued upon. An alleged infringer almost always adopts a modification and escapes the terms of such a claim. Also courts are very apt to sustain a specific claim where an infringer uses the very same thing on which it is based.

For these reasons, therefore, the narrow structural claim is not so important, is of less value and is much less frequently heard of after being once granted.

It is the broad claim that is important. It is this claim that dominates an art, that spreads over the territory that others may seek to occupy. It is almost always this type of claim that is brought before a court, and by which the plaintiff seeks to restrain an alleged infringer who uses something different.

This type of claim is valuable, if it is good, and is harmful if it is invalid. The inventor should have it, if he is entitled to it, and it should be denied him if it is not rightly his. Such a claim should be more carefully weighed. The chance of anticipating such a claim outside the class where the case belongs is proportionally great. Before searching in any place, however, the Examiner should first weigh the question as to whether, if he found something there, it would be in an analogous art and would be a proper reference.

Where an incomplete search is made, the Examiner takes very nearly as much time to make it and fully as much to adjudicate the claims on the art he finds as if he made a complete search. The attorney, in response,

amends his case to define from the art found. The Examiner reviews the case, possibly months later and after he has forgotten both the case and how faithfully he searched it. He will usually research the ground previously covered as well as the additional ground he originally should have searched. Here is a great loss of time because he covers the same territory twice. The whole status of the case may now be changed. The first action taken in the case as well as the response of the attorney are rendered almost useless, possibly quite so. The application is now just where it should and would have been had a complete search been made at first. The practice of not making a full and complete search in the first instance has resulted in some attorneys making a practice of not attempting to really advance their cases until after the second or even third action by the Office. It is easy to see that time and energy are lost by such proceedings.

The temptation is great, where an Examiner is driven at top speed to get off his cases so as to make the necessary weekly gain, to make an incomplete search, hoping that when the case comes up again he will have more time. But he merely puts off the evil day, and in the end does more work and gives more time in reaching a final adjudication of a given case than he otherwise would. When this case is multiplied by a hundred or even a thousand, the Examiner is, like the youth in the foot race, wasting a great deal of energy and time. When the search has been made and the Examiner comes to apply his references and adjudicate the claims, some of them may be squarely met by some references. Little time need be wasted here. Some claims, however, may require a combination of references. Here it is almost always best to explain, in as few words as possible, just how the combination is made. Even where the invention is simple, this is often advisable. It puts the matter specifically and squarely before the applicant and he can and must either point out why the combination is not proper or amend the claims. Where a reference lacks an element recited in a claim or must be modified in any way, even if ever so slightly, it is well to make an explanation, in a few specific words,

just why the element of the claim which is not in the reference is regarded as insufficient, or just what the modification of the reference consists of. Where the subject-matter is more complicated, these explanations are correspondingly more advantageous. Where an attorney is known to be well skilled in the art, less explanation is necessary. Where an inventor is prosecuting his own case but exhibits sufficient knowledge of patent law to warrant the Examiner in the belief that suggestions will enable the inventor to conclude his case without the aid of an attorney, the explanations should be correspondingly extended and made as specific as possible.

This practice places before the inventor or his counsel all formal objections, the complete art, and the Examiner's interpretation of the relation of such art to the application. It is evident the termination of the prosecution of the case before the Examiner need not be greatly prolonged. In the reasonably simple cases, where the entire scope of the invention can be readily seen and comprehended, the third action by the Examiner with the same references before him should ordinarily be sufficient to conclude the case. There are some cases, where special reasons exist, in which further consideration will be necessary. The Examiner should exercise judgment in each case and not make any fixed rule. With the increase in the complexity and extent of the subject-matter of other cases, a reasonable increase in the number of actions is inevitable. Even in these cases, however, the early citation of the complete art, and the notation of all formal objections, will go far to reduce the number of reconsiderations and reexaminations, while in no manner preventing the applicant obtaining full protection for all he has invented.

Whenever final rejection is about to be taken, and whenever the condition of the case indicates such a course would be helpful, the Examiner should suggest in brief specific terms any amendment which he thinks would advance the case or render the claims allowable.

There is a class of applications that I can not approach without realizing I am standing on holy ground

These are the *old* pending cases. Some have been pending five, ten, fifteen, and even twenty-five and more years. I know of no one, or half a dozen, things that will bring about so great an improvement in the condition of work before this Office as the conclusion of the pendency of these cases. Over and over again have they been examined. Unusually they have been amended once a year, some are so old that they fall under the old law of requiring amendment only once every two years. For a variety of reasons, some good and some bad, these cases have been kept in the Office, growing older, their records larger and more cumbersome, and adding very greatly to the labors of the examining corps. The annual amendments made to them have not been calculated or intended to really advance them toward a conclusion. The Examiners, too, have in the past despaired of making much advancement, and their annual actions have sometimes been less complete than they might have been. Until a comparatively recent time the Examiners have felt helpless to solve this problem.

Section 4904, R. S., states:

> "Whenever, on examination, any claim for a patent is rejected, the Commissioner shall notify the applicant thereof, giving him briefly the reasons for such rejections, together with such information and references as may be useful in judging of the propriety of renewing his application or of altering his specification; and if, after receiving such notice, the applicant persists in his claim for a patent, with or without altering his specifications, the Commissioner shall order a reexamination of the case."

Rule 68 is based on this statute and provides that an applicant "may amend as often as the Examiner presents new references or reasons for rejection."

Section 4909, R. S., states:

> "Every applicant for a patent or for the reissue of a patent, any of the claims of which have been twice rejected . . . may appeal from the decision of the Primary Examiner."

Rule 134, which is based on this statute, specifies:

> "There must have been two rejections of the claims as originally filed, or, if amended in matter of substance, of the amended claims, and all the claims must have been passed upon, . . . before the case can be appealed to the Examiners-in-Chief."

These two sections of the statutes and these two rules have constituted the basis for a practice that existed from the adoption of the law, to almost the present time, and which was to the effect that an Examiner could never close the prosecution of a case before him so long as an applicant presented at each reconsideration at least one claim that was different in scope from any previously considered. When it is recalled that an application may have, anywhere from half a dozen to several hundred claims, it is at once apparent any skilled attorney could, under such practice, keep an application pending so long as he desired.

This has been the cord that tied the hands of the Examiners and has rendered possible this great accumulation of old cases. By the decision in *Ex parte* Miller (139 O. G., 730), the cord was severed and the examining corps was relieved from this helpless condition which had become well-nigh intolerable. That decision is based upon the view, which is clear enough, that the statute does not contemplate nor require the repeated reconsideration of an application, dependent only upon the will of the applicant or the skill of his counsel in varying the language used to define the invention.

That decision held:

> "Where the Examiner has held that certain claims are unpatentable and has fully advised the applicant of his reason for such holding and the latter, after reasonable prosecution of the case, has failed to so amend as to necessitate the citation of new references and has been unable by argument to convince the Examiner that he was in error, an issue is reached, and the Examiner is justified in refusing to accept further amendment and in finally rejecting the claims then of record in the case."

This ruling, which has been subsequently fully upheld in *Ex parte* Perry (140 O. G., 1001), a second *Ex parte* Miller (150 O. G., 827), and *Ex parte* Lang (153 O. G., 1081), constituted a very marked departure from the old practice, in that it transferred from the applicant to the Examiner, the power to bring the prosecution of an application before the Examiner to a close. This at once made it possible for the corps to put a check upon what was becoming, in some instances, a grave abuse of the latitude of the Office procedure.

In explaining this holding of *Ex parte* Miller, Perry, etc., Mr. Billings pointed out that while it was true Rule 68 provided that an applicant had a right to amend as often as the Examiner presented new references or reasons, this rule also made it incumbent upon the applicant in amending to "clearly point out all the novelty which he thinks the case presents in view of the art disclosed." It is a natural deduction that if an applicant really does this, when he amends, a condition will ordinarily be reached in one or two actions where the Examiner has no new references or reasons to present.

Still the Examiners are not out of the wilderness. These old cases are often complex and extensive in subject-matter. It is not difficult, and the more complicated they are the easier it is, in amending them, to drive the Examiners to "new references or new reasons." This precludes the application of the Miller doctrine, in such instances, and brings them under Rule 68, giving applicants the right to further amend and argue.

Many inventors and attorneys, since the real condition of the Office and the possibility of stringent legislation being enacted have been made known to them by the Commissioner, have recognized the necessity, in the interests of all, for prompt action looking to a bringing to a conclusion these old cases, and have presented carefully prepared amendments which have enabled the Office to considerably reduce the number of such cases. In passing it is worthy of remark that it is surprising and also gratifying to note the extent to which it is possible to advance one of these old cases,

by a carefully prepared amendment, without sacrificing any of the inventor's rights.

There are, however, quite a number of these old cases where financial and other reasons impel the applicant to seek a further delay. Sometimes large rival concerns have many applications pending relating to a general subject or art, and are involved in many interferences which delay their cases in the office. Their interests are financially very great. Millions have been and are being expended in the production and perfection of these inventions. The securing of patents which will protect the owners in the use of such inventions is vital. To take out some of their patents, while so much is being litigated, and while rival concerns still have pending cases relating to analogous subject-matter, would be productive of enormous loss. These considerations must be given due weight.

Some cases, in which a plea for further delay is made, it would appear that counsel merely hopes, by repeating and impressing his arguments in various forms, to finally win over the Examiner.

Whether rightly or not a good many attorneys do not wish to be denied the privilege of impressing their arguments on the Examiner over and over again. This should not be necessary. If the applicant and the Examiner fully understand the case and the art, there is no necessity for this repeated review.

Some few of these applicants whose cases have been long pending are undoubtedly actuated by motives similar to those which actuate the citizen who does not want to enlist. They hope that, by some hook or crook, to keep their cases going a year or two longer and by that time, they are trusting, the war may be over, and they will finally escape the firing line.

So grave has become this evil of long pending cases, so great is the inertia of this load, so clearly is a remedy necessary to the preservation of our patent system and the interests of inventors and the public alike, that the Commissioner has seriously set about the work of bringing these cases to a conclusion. Results are plainly apparent, but the end has not been reached. Eager to afford these tardy prosecutors an additional oppor-

tunity to protect their inventions as he is, yet he has firmly impressed upon these applicants that he will not permit any needless delay. To that end he has sought to limit amendments to those that will not longer delay the case. He has taken over the personal consideration of all amendments to applications pending five years or over.

> "If an amendment is filed in such a case which puts it in condition for allowance or final rejection, it will be accepted, but if the amendment does neither of these two things, as, for example, when an applicant undertakes to put in new claims the amendment will be considered without being entered and the applicant notified by the Commissioner of the character of a supplemental amendment which will put the case in condition for allowance or final rejection. If the applicant fails to file such supplemental amendment, the amendment which has already been filed will be refused admission and the case when the year is up will be held abandoned." (Commissioner's address to the Patent Bar Association, Chicago, Ill., Nov. 19, 1914, Sci. Am. Dec. 12, 1914, p. 491.)

It will be readily apparent that this plan is going to bring the prosecution of this class of cases to a close, yet there is given each applicant, after all the opportunities he has already had, a still further opportunity to draw his claims to cover what he believes he has invented, and if he can not agree with the Examiner to obtain the judgment of the higher tribunals. Even where an applicant seeks to expand his case anew, at this late date, by claiming something he has not claimed before, thereby necessitating "new references or reasons of rejection" the office goes so far as to examine this new amendment and indicate to him what part, if any, is allowable, and gives him an opportunity to incorporate this part in his patent.

It would seem that this plan is as liberal as is possible, consistent with the end had in view, and that

no one can justly claim his rights have not been safeguarded.

Returning to the consideration of applications generally, there is thought to be some loss of time due to what may be called debatable rejections. There is no need to discuss here practices that are settled, grounds of rejection that are fixed, but there are several grounds of rejection that are very frequently used and possibly a little more uniformity throughout the corps would be an economy of time.

I have read office letters rejecting claims on the ground they recite aggregations, where the claims would seem to be for true combinations, which were merely old combinations. Perhaps the ultimate end, the amendment of the claim, is finally reached, but often such rejection precipitates argument and needless waste of time.

While the United States Supreme Court in the decisions of Hailes *vs.* VanWormer (20 Wall., 368) Florsheim *vs.* Schelling (53 O. G., 1737); Adams *vs.* Bellaire Stamping Co. (57 O. G., 1280); Richards *vs.* Chase Elevator Co. (71 O. G., 1456); Reckendorfer *vs.* Faber (92 U. S., 347), and the U. S. C. C. of Appeals ,Seventh Circuit, in the case of Deere and Co. *vs.* Rock Island Plow Co. (82 O. G., 1561), discuss very fully this question of aggregation versus combination, the following from a decision of the Examiners-in-Chief, made in a recent case, is so pertinent that I take the liberty of quoting it.

> "In the first place, it should be observed that the problem of whether a given claim sets out a patentable combination or an aggregation is not to be solved by the citation of references. A true combination of elements, working together under a cooperative law, and producing a given result, remains a true combination for all time, irrespective of the antiquity of its original creation, . . . the ground of rejection which is proper is not that the combination is illegitimate, but that it is old."

The question settles itself by determining whether the elements named in the claim *cooperate, work to-*

gether, though not necessarily simultaneously, but so that by virtue of what they *together* accomplish, a different result is secured from what would be secured if the elements were used separately. As was said by the Supreme Court in the Reckendorfer *vs.* Faber case, *supra*: "There must be a new result produced by their union; if it is not so it is only an aggregation of separate elements." This case was based on a lead pencil with a rubber eraser at one end. The court aptly pointed out that the rubber did not perform any function in connection with the writing. It remained inoperative, and could as well be absent. So in erasing the marks, the pencil remained inactive, did nothing, could as well be absent. These two things never worked together, and never accomplished any joint function or result.

A second ground of rejection that gives rise to much trouble and creates considerable argument and friction is applied to claims for alleged machine or apparatus methods or processes as distinguished from chemical and article methods.

It is not the purpose of this paper to discuss this class of claims from an academic view point or quote from the many learned expounders of this subject. Further, the matter has been ably treated in a previous paper presented to this body. It is desired here, however, to make, if possible, a few practical, rough suggestions which may be helpful in determining whether a claim is for a true method or for the function of the apparatus.

The authorities are pretty well settled that the old definition of the United States Supreme Court in Cochrane *vs.* Deener (11 O. G., 687), stands as about the most tangible and workable definition yet given. There must be present an act or a series of acts and they must be performed upon something to change it to a different state or thing. Remembering that only so-called machine processes are under consideration, and that the main difficulty is to distinguish them from the function of the machine or apparatus, it may be helpful to first note that the claim does not recite specific means or mechanism. If this specific mechanism is necessary to

support the alleged steps, it is probable these latter are inevitably the function of such mechanism. It is well to try to discover what the step is or what the series of steps are; to recognize them in the language used in the claim. Then the thing they are performed on should, if possible, be identified. This may be the electric current, as in the Telephone Cases (126 U. S., 1532), and O'Reilly *vs.* Morse (15 Howard, 62). If these can be identified it is generally easy enough to determine whether the steps are so tied to specific mechanism as to be but its function, or whether they can be performed, within the language or terms of the claim, by different mechanisms differently organized, or, if the nature of the steps permit, by hand. While no function can be carried out without some means to do it, yet the function must be distinct from the means, from its practical embodiment, and its immediate effect. There must be some other means, with some other embodiment, to which this function is common. Robinson on Patents cites the example of smoothing something, and explains how different things, like running water, a single knife, a sliding weight, a group of revolving knives, may perform this function. The machine step of smoothing, therefore, is performed by some means, but is not a function of any specific means, but is a function of several different mechanisms or means, and is a proper step of a method. Again, this author cites the function of exploding or igniting a substance, and notes this may be accomplished by different means, as a red hot iron, a flame, the electric spark, etc. The function is common to these different devices, and also these different devices can operate without producing the function of exploding or igniting a substance. These things have separate existence, the means is a permanent thing and the function is a transient, intangible thing.

If these principles concerning this class of claims can be had in mind considerable time can be saved, both in determining when a claim should be rejected and in making suggestions to an applicant who discloses but is not succeeding in properly claiming a method of this character.

There is another ground of rejection which is not

uniformly interpreted throughout the office. This is that the claim is functional in that it fails to recite the means for accomplishing the results specified. Sometimes the mere length of a functional statement, predicated upon a properly included means, is made the basis of rejection. Obviously this is in error.

The so-called "whereby" clauses, and those beginning with the word "adapted," are often found to be unsupported by the inclusion in the claim of the means for accomplishing these functions. In such cases, the means should be included. But the statement of means, mechanisms, or devices, accompanied by their functions, constitute the long accepted manner of drawing claims for mechanical inventions. If the elements are recited, the length of the functional clause is of no moment. If recited generically, the claim is merely broad and if otherwise patentable is allowable.

There is a class of claims wherein the entire invention is recited in the generic words "means," mechanism, or devices, accompanied by the functions of such means, or mechanism, without defining anywhere in the claim the structural nature of the means or mechanisms or devices. Of course these claims are as broadly drawn as possible, and in language, cover any and all means for accomplishing these functions, cover means substantially different.

There are at least two views held in this Office as to such claims. One is that they are too broad, are broader than the invention, and that they are therefore unpatentable. Beside several Commissioner's decisions there are decisions of the United States courts which look to the support of this view. (Consolidated Electric Light Co. *vs.* McKeesport Electric Light Co., U. S. Supreme Court, 159 U. S., 465; Madison *vs.* Campbell, U. S. C. C., 78 Fed. Rep., 910; Wilson Trolley Catcher Co. *vs.* Frank Ridlon Co., U. S. C. C. of Appeals, First Circuit, 159 O. G., 244; *Ex parte* Denning, 26 O. G., 1207; *Ex parte* Knudson, 72 O. G., 589; *Ex parte* Pacholder, 51 O. G., 295.)

The other view is that no matter what the breadth of terms used in the claim, an inventor is only entitled to what he has invented and produced, and substantially

its equivalents and, if the invention is of a pioneer character, the range of equivalents will be proportionally broadened when, on proofs, this is made to appear. These claims, if they can not be met by references, are, therefore, to be allowed.

The cases where courts have held such claims void on this ground alone, of being broader than the invention, are so few, and modern judges are so prone to construe claims to save a really meritorious invention that the question is one of no very great moment.

There is one other ground of rejection of which mention may be made. This is upon the so-called Hawley doctrine. This doctrine was first emphasize and made prominent in the decision of the Court of Appeals of the District of Columbia, *In re* Hawley (121 O. G., 691), although it is but a repetition of the substance of *Ex parte* Griffith (85 O. G., 936). This holding has been confirmed by the same court *In re* McNeil (20 Ct. App. D. C., 294), and *In re* Ratican (162 O. G., 540). Later the Circuit Court of Appeals, Third Circuit, held a claim void on this ground in the case of Langan *vs.* Warren Axe and Tool Co. (166 O. G., 986).

This doctrine is to the effect that where the combination recited in the claim is old and the distinction over the prior art resides in one element only of the combination and does not result in a modified or improved action of the other elements of the combination the claim is unpatentable and should be limited to the element *per se.*

The doctrine has been quite extensively applied by some Examiners and but little used by others. It is a proper ground of rejection when properly applied.

It is believed the vital determining factor is whether the element which has been improved constitutes a complete thing itself capable of separate and independent use, or one that has acquired a distinct status in the arts and trades. If neither of these conditions is present, it is doubtful if the doctrine applies.

In the Hawley case, the improvement was in a tape to be used in a recording mechanism. The latter was not modified in any way and was admittedly old. Obviously the tape fulfilled the conditions above noted.

No one would buy a new recorder every time he used up the tape, any more than one would buy a new typewriter machine every time he used up his supply of paper. The tape was clearly a separate subject of invention, a separate article of manufacture and sale and should not have been claimed in combination with the old recorder.

In the Ratican case, the invention resided in a nozzle for a street washing machine, otherwise old. It is plain enough the nozzle was a separate, complete unitary thing, did not in any manner change the operation of any part of the machine, was a separate subject of manufacture and sale. Obviously no one, wishing a new nozzle, would purchase an entire new street washing machine.

The case of Langan *vs.* Warren Axe and Tool Co. is a very much more important one. The decision was rendered by the United States Circuit Court of Appeals, the patent was already granted and the claim was held invalid.

There exists some difference of opinion as to whether this ruling may be said to uphold the so-called Hawley doctrine. There was a very plain discrepancy between the statement of invention in the specification and the structure covered by the claim. The specification made it very clear that the patentee had invented a new kind of grab-hook, and merely described how such hooks were to be used, in pairs, with a draft device in skidding logs. The claim, however, was for the combination of a pair of hooks with the draft device. The novel details of the hook were, however, specified in the claim.

The court emphasized this lack of consistency between the statement of invention in the description, which was that applicant had merely improved the hook, and the statement of the claim, and in doing so said:

> "There is no suggestion that any part of the patentee's invention resides in the combination of the grab-hooks and the draft appliance. The connection between the grab-hooks and the draft appliance by means of links or chains is mentioned, but such connection was as old

> as grab-hooks themselves, and the patentee expressly states that his invention consists, not in any such combination, but in the particular and peculiar form of hook. . . . Not only is the claim for a combination foreign to what is set forth in the specification, but there is no new coaction or cooperation of the elements of the combination. The grab-hooks and the draft appliance of the patent, in combination, coact as grab-hooks and draft appliances have always done. The grab-hook of the patent, by reason of its peculiar construction and form, is very probably an improvement of no little utility. But the patentee can not, merely because of this fact, have a patent for a combination, which shall have, as one of its elements, a pair of such grab-hooks. He did not invent the combination. He invented, if he invented anything, an improved grab-hook."

On being urged by counsel to construe the claim as for the hook alone, the court said:

> "Manifestly, we can not so construe it. The claim is for a combination of grab-hooks, of a peculiar form, and a draft device. We are not at liberty to distort its plain language."

Whatever may be the view as to the general effect of this decision, the fact is plain enough that this patentee lost his invention because he did not claim the hook alone, because he claimed it in the old combination which it did not affect in any new way.

It is hardly to be presumed the court would have found the claim valid if the patent itself had not contained the inconsistencies noted by the court, provided the proofs adduced at the trial had been such as to set forth this same state of facts.

This decision is sufficiently suggestive, that in plain cases, the doctrine should be applied.

In the usual house door-bell arrangement, in use all over this city, there is a push button switch, a bell, a battery, and the wire conductors. Each is a separate subject of

invention and has a distinct status in the art and trades. An inventor may improve the bell, the switch, the battery, or the wires. None of these improvements would affect the mode of operation of the other elements, and the claims should be confined to whichever element—the switch, the bell, the battery or the conductors—that is improved. A combination claim should not be allowed.

But if an invention is made in a part of the switch, or the bell, or the battery, which part has no general utility, no separate status, it is doubtful if the Office is warranted in objecting to a claim that includes the entire switch or the entire bell, or battery. These are unitary things, and to carry the Hawley doctrine to their details of structure constitutes a refinement of procedure that can only result in harmful confusion, friction and delay.

An adherence to this firmer ground in the application of this doctrine will in no way endanger the validity of any grant, but will save much time and needless argument.

In conclusion I leave with you, therefore, this suggestion:

If this great and ever-increasing quantity of work is to be carried on at all, if there is not to be such an accumulation of pending applications as will cause the whole examining system to fall of its own weight, there must be a greater uniformity of practice on the part of the various Examiners, there must be fewer needless objections; fewer needless rejections, better first searches, more carefully considered actions, both on the part of the Examiners and on the part of the applicants as well, and a more prompt conclusion of the pendency of cases before the corps.

January 28, 1915.

ABANDONMENT OF INVENTION

A paper read December 10, 1914, before the Examining Corps of the United States Patent Office

BY

HARRY C. ARMSTRONG,
Principal Examiner, Division Eleven
U. S. Patent Office.

WASHINGTON, D. C.
1914

Abandonment of Invention

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Abandonment of invention is referred to in the Revised Statutes, directly or indirectly, in four sections, 4886, 4887, 4897, and 4920.

In section 4886, which sets forth who may obtain a patent and under what conditions, occur the reservations "not patented or described in any printed publication in this or any foreign country . . . more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same (the invention) is proved to have been abandoned."

In section 4887, relating to the bearing of a foreign patent granted to an applicant in this country for the same invention, it is provided that a patent shall not be granted in this country upon an application filed more than twelve months subsequent to the filing of the application upon which the foreign patent was granted. The act of the inventor in permitting a foreign patent to issue under such circumstances operates as a virtual abandonment of his invention to the public in this country.

Section 4897, providing for the renewal of a forfeited application by means of a second application, contains the reservation "but such second application must be made within two years after the allowance of the original application," and further "and upon the hearing of renewed applications preferred under this section, abandonment shall be considered as a question of fact."

Section 4920, relating to the pleading in suits for infringement, enumerates among the proofs which may be adduced the fact that the invention had been in public use

or on sale for more than two years before the application for a patent or had been abandoned.

The term abandonment of invention is often somewhat loosely applied to three quite distinct conditions:

First: That situation where the would-be inventor has failed to complete his invention and embody it in an operative device or process useful to the public, and finally, either through discouragement or from pressure of other affairs, lays it aside uncompleted. This is hardly an abandoned invention for, properly speaking, there has been no invention. It is necessary that the inventive act shall be complete and embodied in operative and useful form, otherwise there exists merely an incomplete concept which if cast aside in that condition can be no more than an abandoned experiment or abandoned attempt to make an invention. A patent is essentially a contract between the inventor and the public in which the latter agrees to confer upon the former a monopoly, limited as to time, of the exclusive rights in his invention in consideration of the cession to the public of all such rights at the expiration of the term of the monopoly. If the invention has not been completed it can not serve as a consideration for such a contract and therefore the neglect or inability to complete it can not constitute an abandonment to the public nor serve to deter another from completing it or using it as a basis for other inventions and reaping the rewards of his greater inventive skill or diligence.

Second: That condition where the inventor completes his invention and clothes it in operative and useful form ready for disclosure to the public, and fails to make such disclosure, laying it aside for future development. There seems to be here no idea of abandonment to the public since the latter, under such circumstances, can have no knowledge of the invention nor profit from it. Such withholding of the invention from public knowledge does not prevent another and more diligent inventor from obtaining a patent on the invention so withheld from the public, nor does it prevent the dilatory inventor from later obtaining a patent if the delay in disclosure be excusable or if no other inventors have established rights during the delay.

Third: That condition arising when the inventor has

completed his invention in operative form and then, voluntarily or involuntarily, at any time, either before applying for a patent, at the time of such application or during its prosecution, relinquishes to the public his rights to that invention. This seems to be properly termed abandonment of invention, for the relinquishment is final and irrevocable, the public enters into full possession of the invention so abandoned and any subsequent patent thereto is barred to the inventor or any other person. As Robinson tersely sums up these different classes: "The first abandonment is an abandonment of his intention to become an inventor; and leaves the field open for subsequent inventors to conceive such new ideas or such improvements upon his idea, as will complete the invention and enable them to appropriate it to their exclusive use. The second abandonment is an abandonment of his intention to render the invention practically available for any purpose, and thereupon it is regarded as never having been conceived. The third and true form of abandonment is a dedication of the invention to the public and closes the field forever against not only himself but every subsequent inventor, until the art or instrument shall once more pass from public knowledge and thus become a subject for re-invention."

The surrender of a patent to the public before the expiration of its life seems not to be properly included in the term "abandonment of invention," but rather is a dedication or gift to the public of an item of personal property analogous to the similar gift of any other form of property.

Abandonment of invention may, therefore, be defined as the complete and final relinquishment to the public by the inventor of a complete invention of all his rights thereto. The surrender must be to the public as a whole and not merely to an individual nor to particular individuals and must be before the grant of a patent.

Abandonment of invention, once effected, is irrevocable:

"An inventor may abandon his invention. This inchoate right thus once gone can not be resumed." (Pennock *vs.* Dialogue, 2 Peters, 1.)

Consideration of the subject of abandonment of invention naturally follows two broad lines, those of actual abandonment and of constructive abandonment.

ACTUAL ABANDONMENT OF INVENTION.

Actual abandonment of an invention is effected by the expressed or inferred intention of the inventor to relinquish to the public his entire rights in such invention. He may expressly declare his purpose or his conduct and circumstances may make reasonable the inference that he had such intention to relinquish his rights. The circumstances tending to show such intent on the part of the inventor may and do vary in each case, but the courts look with scant favor upon forfeiture by abandonment of the inventor's rights and the intent to so relinquish must in all cases be clearly and fully established by proof.

WAYS IN WHICH AN INVENTION MAY BE ABANDONED.

An inventor may complete his invention and communicate it to the public, verbally or in writing, and at any time make known his intention to dedicate his invention to the public, waiving any rights to exclusive use by himself; or he may publish his completed invention and then neglect to use it or to seek to patent it, thus showing no intention to retain it for his own use; or he may perfect and use it and then apply for a patent before two years public use has occurred, the public use being accompanied by circumstances which show an intention on his part to relinquish his rights to the public, even though such intention was afterward repented of and an application filed. All the foregoing conditions effect abandonment of the invention, the presumption of abandonment being always strengthened where another inventor has entered the field and established an equity while the first inventor has inexcusably neglected to file an application to protect his rights. What constitutes unreasonable delay is of course a question of fact in each case. A brief outline helpful in such consideration is given in Von Schmidt *vs.* Bowers, 80 O. G., 347:

> Delay in applying for a patent after an invention is made will not constitute abandonment where the inventor has used reasonable diligence to perfect the invention and avail himself of its

> benefits and there is no general standard by which such diligence is to be established; but it must be reasonable under all the circumstances of the particular case. The character of the invention; the health, the means, the liberty of the inventor; his occupation upon kindred or subordinate inventions; are proper subjects for consideration. Such reasonable diligence does not involve uninterrupted effort nor the concentration of his entire energies upon the single enterprise.

A delay of years between the reduction to practice of an invention and application for a patent therefor shown to be for the purpose of first profiting from the use of the invention in secret and then from patent protection was held to constitute abandonment (*In re* Mower, 88 O. G., 191).

Abandonment of invention may be effected by a statement signed by the inventor, filed with or included in an application, dedicating to the public the matter disclosed therein, or any part of it; or the inventor may embody in one application as filed an express declaration of abandonment of an invention disclosed or claimed in another application.

The inventor may fail to claim an invention disclosed in an application containing claims to other features indivisible from such invention. The statutes require that the inventor "shall particularly point out and distinctly claim the part, improvement or combination which he claims as his invention or discovery." If he discloses an invention without any effort to claim it the presumption is that his intention is to dedicate it to the public unless the circumstances are such that he could not claim it in the same application with the invention to which he has directed his claims, or unless he claims it in another contemporaneously pending application.

Abandonment of invention by failure to claim it is discussed in *ex parte* Mullen and Mullen, 50 O. G., 837. In this case the examiner declined to examine a certain application on the ground that it covered matter shown, but not claimed, in an earlier patent granted to the same party prior to the date of the second application. He

held that applicant's only relief lay in a resissue of the earlier patent. The Commissioner, Mr. Mitchell, reversed the examiner and took occasion to say:

> The only relief possible is through the right to obtain a patent upon the latter application for that which was described but not claimed in the earlier application, if such a right is recognized by law and is applicable to this case.
>
> It is believed that applications may be divided into three different classes with reference to that aspect of the question of division which is here involved.
>
> 1. Cases where the various claims differ among themselves only as they constitute different statements of one and the same indivisible invention—cases where, in other words, the lines of division exist as mental figments only and have no corresponding existence in the concrete subject of invention. In all such cases one application only is permissible, whether pending concurrently or not, because only one patent can be granted for a single invention and a second patent for the same invention under another guise would result inevitably in an illegal extension of the period of exclusive use.
>
> 2. Cases where several distinct inventions are dependent upon each other and mutually contribute to a single result. In such cases the several inventions may be included in one patent or they may be separated into as many patents as there are separate and distinct inventions. In all such cases if a patent issues describing all of the mutually dependent inventions and claiming but one of them, a presumption of dedication arises out of the failure to claim what might have been claimed in the same application. This presumption of dedication is repelled, however, if the inventions not claimed in the patent first to issue are claimed in applications contemporaneously pending in the office.
>
> 3. Cases where the invention described and not

> claimed is absolutely independent of the invention actually claimed in the first patent. In such a case the invention described but not claimed could not have been lawfully protected in one patent with the independent subject-matter which was actually secured. There can be no presumption of dedication arising out of a failure to claim in a given application what could not have been claimed in that application and it is believed that no obstacle exists in such a case to obtaining a patent otherwise allowable upon any application that may be filed before the invention has been in public use or on sale for more than two years and before actual abandonment.

It may be remarked that in the class last referred to the second application must be filed not more than two years from the patent date of the first application, else the patent will serve as a publication to bar the grant of a subsequent patent.

An invention may be abandoned by deliberately canceling claims to it from an application in which it is claimed and omitting to file other claims to it, either in the same or another application, before the grant of a patent on the application from which it was canceled. For the purpose of securing a speedy allowance the applicant not infrequently cancels claims which are under rejection on references or for other reasons and obtains a patent with more limited claims than those which he had at some time pending in his application. If he later repents of the cancellation and seeks to secure by a reissue the matter covered by the claims he had eliminated, he finds that he is unable to do so—he has abandoned the invention covered by them; there was no inadvertence, accident or mistake. Closely allied to this situation is that where the applicant inserts in the specification a disclaimer or statement of limitation of the scope of the matter claimed. The final result is equally disastrous, for the scope of the patent granted after such a history will be held strictly within the limits set by the applicant himself. This practice is well established by decisions of the Supreme Court, from which are selected Yale

Lock Co. *vs.* Berkshire Bank, 51 O. G., 1291; Pittsburg Reduction Co. *vs.* Cowles, 55 F. R., 320; Leggett *vs.* Avery, 17 O. G., 445; Union Metallic Cartridge Co. *vs.* United States Cartridge Co., 30 O. G., 771; Shepard *vs.* Carrigan, 34 O. G., 1157; and Roemer *vs.* Peddie, 49 O. G., 2151, the following excerpts being taken from certain of these decisions:

> The proceedings in the Patent Office are for the purpose of reducing the description of the real discovery and the claims to such a form that a patent may properly be granted for them. Until the patentee accepts the patent, he can not be held impliedly to disclaim anything in his real discovery. If he makes a claim which is rejected and he accepts the patent without the claim, then he waives the right to a monopoly therein (Pittsburg Reduction Co. *vs.* Cowles, supra).
>
> If an applicant, in order to get his patent, accepts one with a narrower claim than that contained in his original application, he is bound by it. If dissatisfied with the decision rejecting his application, he should pursue his remedy by appeal. Under the circumstances of this case, the inventor could not even get a reissue based on the broader claim which she has abandoned (Leggett *vs.* Avery). Much less can she, in a suit brought to restrain its infringement, enlarge her patent by argument, so as to cover elements not falling within its terms, and which she had explicitly abandoned (Shepard *vs.* Corrigan, supra).
>
> This court has often held that when a patentee, on the rejection of his application, inserts in his specification in consequence, limitations and restrictions for the purpose of obtaining his patent, he can not, after he has obtained it, claim that it shall be construed as it would have been construed if such limitations and restrictions were not contained in it (Roemer *vs.* Peddie, supra).

Under such rulings the importance of careful consideration by the examiner in requiring cancellations and

limitations and by the applicant in complying with such requirements becomes apparent.

A party having a patent involved in interference may file a reissue therefor leaving out the claims corresponding to the counts of the issue. This has been construed as a formal abandonment of the invention covered by such claims (Lattig & Goodrum *vs.* Dean, 115 O. G., 505).

An invention which forms the subject-matter of an interference may be abandoned under Rule 125 by an unequivocal, unconditional, unlimited, written declaration of abandonment of the invention, signed by the applicant in person and by any assignee. Judgment of priority will then be rendered in favor of the remaining party if there be only one, or the interference will be continued between the remaining parties if there be more than one (Skinner *vs.* Murray, 107 O. G., 542, and Gabrielson *vs.* Felbel, 121 O. G., 691).

If each party involved in interference file such a declaration of abandonment the interference will be dissolved (Krakau *vs.* Harding, 107 O. G., 1662).

A stipulation of the parties to an interference setting forth that the issue is not patentable will be treated as an abandonment, and the interference remanded to the primary examiner with instructions to dissolve it (Lesley & Spackman *vs.* Ellis, 21 Gourick, 35-5).

An application may be abandoned without necessarily abandoning the invention covered by it, unless there be other facts to show conclusively that the inventor, in abandoning his application, intended thereby to abandon the invention also.

Another cause of abandonment after application may be the operation of equitable estoppel. An inventor who completes an invention and inexcusably delays application for its protection by a patent, does so at his own risk, since during the period of his laches another more diligent inventor may apply for and obtain a patent for the invention or intervening rights may arise to deprive the first inventor of the rewards he might have reaped by the exercise of greater diligence. Does this doctrine of equitable estoppel apply to applications filed in the Patent Office and prosecuted within the provisions of its

rules? This question has been treated in a recently published decision of the examiners-in-chief (Barber *vs.* Wood, 207 O. G., 299). Briefly stated, the facts are that while Wood's application was in issue awaiting the payment of the final fee, Barber's patent was inadvertently issued by the office without institution of interference proceedings between these copending applications of Barber and Wood and Barber soon after made machines embodying the invention and placed them on the market, selling a number of them. Wood forfeited his application after Barber's patent had issued and did not renew it until nearly eighteen months after such issuance. The application and patent then went into interference, the final adjudication of which was a decision by the examiners-in-chief awarding priority to Barber on the ground that Wood, through his delay in renewing his forfeited application when other parties had patented the invention and established intervening rights, was equitably estopped from obtaining a patent for the invention he had thus abandoned through his own laches. This conclusion appears to be based upon no proved intention on the part of Wood to abandon his invention, but rather upon the broad equities as disclosed in the record, differing in this respect from the other causes of abandonment previously referred to in this section. This decision should be read in onnection with Cutler *vs.* Leonard, 136 O. G., 438; Cain *vs.* Park, 86 O. G., 797; Mason *vs.* Hepburn, 84 O. G., 147; Crown Cork and Seal Co. *vs.* Aluminum Stopper Co., 96 O. G., 2573; Warner *vs.* Smith, 84 O. G., 311; Christensen *vs.* Noyes, 90 O. G., 223; and Farmer *vs.* Brush, 17 O. G., 150.

CONSTRUCTIVE ABANDONMENT.

Constructive abandonment of invention is effected by the application of statutes which operate entirely regardless of the intention of the inventor with respect to the abandonment of his invention.

The most usual example of constructive abandonment is, perhaps, that due to public use or sale for more than two years prior to application.

The statutes of 1793 provided that abandonment

should ensue in case of any public use of an invention before the inventor had applied for patent therefor. This was interpreted by the courts to mean any public use with the consent or acquiescence of the inventor. In 1836, this interpretation of the courts was adopted in the statutes and at the same time, the sale of the invented thing was made equivalent to its public use. In 1839, in order to alleviate somewhat the hardships imposed upon inventors by so strict a rule, and, possibly, to avoid certain difficulties arising in the consideration of questions of fact relating to consent or acquiescence in different cases, Congress provided by statute that an invention might be used or sold for not over two years before date of application for a patent without abandonment thereby ensuing. In this statute the words "with the consent or allowance of the inventor" were omitted and have not been embodied in any subsequent statute.

The courts in interpreting the statute of 1839 have held that the omission of the clause above quoted was intentional on the part of Congress, and that constructive abandonment is effected when the invention has been in public use or on sale for more than two years prior to the date of application, whether or not such use or sale is known to or acquiesced in by the inventor. The leading decision on this point is the so-called "driven well case," Andrews *vs.* Hovey, 41 O. G., 1162 (Supreme Court).

The tests for determining public use or sale constitute a separate subject for consideration and will not be discussed here.

An invention applied for after 1897, may be constructively abandoned by failure of the inventor to apply for a patent in this country within two years of the issuance of a patent in any country to any person, or within two years after the subject of invention was described in a printed publication anywhere.

Closely allied to this form of constructive abandonment is that occurring under Section 4887, where the inventor of an art, machine, manufacture, or composition of matter, has applied for a foreign patent more than twelve months before the date of application in this country,

and a patent has been granted on such foreign application before the invention has been patented in this country. In the case of designs this period of twelve months is reduced to four months. This form of constructive abandonment applies to all applications filed subsequent to March 3, 1903.

With respect to all applications filed subsequent to 1897, and prior to March 3, 1903, foreign patents granted on applications filed more than seven months prior to application in this country effect constructive abandonment of the invention covered thereby, if the patent in this country be not granted before the issuance of the foreign patent.

December 10, 1914.

THE ENTRY OF AMENDMENTS

A paper read December 10, 1914, before the Examining Corps of the United States Patent Office

BY

THEODORE A. HOSTETLER,
First Assistant Examiner, Division Eleven,
U. S. Patent Office.

WASHINGTON, D. C.
1914

The Entry of Amendments

By

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United States Patent Office.

It is the well settled practice of the Patent Office to permit an inventor to amend his application under certain restrictions, to supply omissions and defects and correct informalities in the papers that have been filed, and to otherwise revise the application to secure for him the invention to which he is legally entitled. But in permitting amendments to be made, due regard must be had for the rights of the public in general and the rights of rival inventors.

UNSIGNED OR IMPROPERLY SIGNED AMENDMENTS

which are to be returned for signature should be forwarded to the Chief Clerk of the Patent Office with a memorandum giving the name and address of the attorney, date of the last office action in the case, and a statement as to why the paper is to be returned. The Chief Clerk will cancel the receiving stamp and conduct the correspondence incident to the return of the papers. If there is not sufficient time for the return of the amendment for signature before the expiration of the time allowed by law within which to take proper action, the examiner will endorse it on the file wrapper, but will not enter the amendment, and will notify the applicant of the status of the case. The informal amendment may be useful in determining the question of abandonment of the application.

In all cases where papers are returned to applicants for any reason it is advisable that the clerk place a pencil memorandum in the file for future reference. The record in every case should be so complete that any person

taking up the case at any time can understand the status or condition of the case without making any inquiries.

If an amendment is signed by rubber stamp, it should not be accepted. Ex parte Minehan, 134 O. G., 1298 (1908). Acceptance of amendments so signed would open the door for grave irregularities. Amendments should be signed by the applicant or his attorney with pen and ink or their equivalent. An amendment with a stamped signature should be treated as an unsigned or improperly signed paper.

PERMANENT INK.

Amendments must be written in permanent ink. Ex parte Burns, 101 O. G., 661 (1902). In 1880, July 30th, Commissioner Marble issued the following order, No. 32:

> All applications, communications, and other instruments in writing or print, which should constitute a permanent record in the office, must be prepared with a substantially permanent ink. Analin and other perishable inks will not be accepted.

It appears that a permanent ink must have a foundation of lampblack or carbon. The tests given in Ex parte Blaubach, 84 O. G., 1732 (1898), and used in other Executive Departments are two in number—first the application of Labarraque's solution followed by a saturated solution of oxalic acid, and second, the application of a 10 per cent solution of nitric acid. Ex parte Ritter, 57 O. G., 1883 (1891) is another decision that bears on the question of fugitive inks. See also Rule 30.

AMENDMENTS IN GENERAL.

Where an amendment to an application is received more than a year after the date of the last office action, it is indorsed on the file wrapper of the application, but is not formally entered, and the examiner immediately notifies the applicant that the amendment was not filed within the statutory period, and therefore can not be entered. Order 1854.

When an Associate Attorney is prosecuting a case, and the Principal Attorney files an amendment over his own signature, it must be entered and acted upon, if it is otherwise a proper amendment. The practice of filing amendments by both the principal and associate is discouraged. Ex parte Eggan, 172 O. G., 1091 (1911). This decision also states with whom the correspondence is held when there are several attorneys in the case.

A substitute specification is objectionable and in general should not be filed unless required by the office in view of the number or nature of the amendments to the original specification. No general rule can be given as each case must be decided upon its own merits. Ex parte Orewiler, 170 O. G., 481 (1911).

Where an inventor files his own case, and at the suggestion of the office employs an attorney a new specification is admitted. Ex parte Clifford, 193 O. G., 511 (1913). This is not an exception to the general practice, but is based upon the presumption that the conditions are such as to necessitate a new specification.

It is the well-settled practice of the office that an amendment can not be entered in part. To enter an amendment so far as responsive and to refuse to enter the remainder thereof, would lead to endless confusion. As an example, where after final rejection an amendment is presented canceling the finally rejected claims and presenting certain new claims without a verified showing, the amendment should not be entered. Ex parte Hodge, 173 O. G., 1079 (1911).

An amendment is presented in which the last claim is canceled by a line drawn through it with a pen without anything to indicate who canceled it. The amendment is informal but should be entered and applicant should be required to cancel the claim by the usual amendment. In like manner, pencil interlineations which apparently are intended to be a part of the specification should be called to applicant's attention in order that they may be erased or entered in the case upon proper authorization.

Where applicant's instructions to amend are erroneous, but it is clear what his intentions are, the amendment should be properly entered and applicant, in the next office letter, should be informed definitely what has been done.

Where a case is not closed against further prosecution and an amendment is received that is fully respcnsive and also contains additional matter that is not responsive, it is the practice to enter the entire amendment, give action on the responsive part, and require the cancellation of the part that is not responsive.

Claims which necessitate the requirement of division, if presented in an amendment, should be entered and division required. Claims presenting a new species other than that elected should be entered and applicant should be required to cancel them. Ex parte Selle, 110 O. G., 1728 (1904).

Where the examiner suggests claims to an application for the purpose of interference under Rule 96, and sets a time within which to make them, and the applicant does not make the claims until the other interfering application has become a patent, it was held that the amendment should be entered, and the claim considered in order to give applicant an opportunity for appeal. Ex parte Swift, 111 O. G., 2494 (1904).

DELAYED APPLICATIONS.

It is a great injustice to the public and cther inventors to permit an applicant to prosecute his application indefinitely and keep his invention from the public while the art is growing up and passing by his invention. To then allow a patent to issue with claims covering the art is unjust and inequitable to the public and especially to other inventors who have developed the art. The practice announced in Ex parte Miller, 139 O. G., 730, and Ex parte Perry, 140 O. G., 1001, is designed to remedy this evil by closing the prosecution of applications before the office, when they have been pending for a long time, or when an issue has been reached.

The policy of the Patent Office, as gleaned from the Commissioner's report, 199 O. G., 939, and a later report in the Scientific American, August 1, 1914, is to reduce the time during which applications may pend in the office. An order is now in force which requires amendments to cases which have been pending five years or more, to be called to the personal attention of the Commissioner before being entered. This time is to be

gradually reduced until cases which have been pending more than two years will probably be included in this order. An investigation instituted by Commissioner Ewing last June disclosed the fact that the patents issued during the first six months of 1914 were pending in the office as applications an average time of twenty-one and one-half months. This average has risen until it is now (December, 1914) more than two years. With many of the old applications ultimately eliminated the average time applications pend in the office will be much less than that. Hence a new rule or order requiring all cases which have been pending more than two years and all amendments thereto to be called to the personal attention of the Commissioner may eventually be promulgated.

AMENDMENTS AFTER FINAL REJECTION.

After a case is under final rejection, the following amendments may be entered:

(1) Amendments canceling claims or the matter upon which appeal is to be taken.

(2) Amendments presenting the rejected claims in better form for appeal.

(3) Amendments accompanied by a showing duly verified of good and sufficient reason why they were not earlier presented.

(4) The examiner has discretion to admit other claims for the purpose of appeal.

(5) He can waive the final rejection and open the case for further prosecution.

(6) He can admit amendments containing claims for the purpose of interference.

(7) He can admit an amendment containing a claim which he deems patentable; but the entry of the amendment does not reopen the case for further prosecution.

When broad claims are finally rejected, an amendment canceling the broad claims and substituting more limited claims is not in itself a sufficient showing to reopen the case. Ex parte Lange, 163 O. G., 727 (1911).

In a finally rejected case, the Examiners-in-Chief affirmed the examiner but cited a new reference which disclosed certain features of the claim not shown in the

references of record. This reopened the case for further prosecution before the examiner. Ex parte Wade, 158 O. G., 704 (1910).

Where claims which were recommended by the Examiners-in-Chief are rejected by the examiner on new references, applicant has a right to amend them or substitute new claims therefor, provided they are directed to the same invention as that covered by the rejected claims. If, however, a claim is presented directed to an invention different from the rejected claim, it should not be entered, as the case is not reopened for general prosecution. Ex parte Lindsey, 156 O. G., 1067 (1910).

Where, after a final rejection, an amendment is presented containing some claims which are admissible, such as claims copied from a patent, for instance, and some which are not admissible, the entire amendment should be entered and the requirement made that the claims which are not admissible be canceled before forwarding the appeal. Ex parte Stickney, 185 O. G., 1379 (1912).

After final rejection amendments to the description which do not touch the merits of the claims but present the invention more clearly may be entered without reopening the case for further consideration. Ex parte Loppentien, 122 O. G., 1723 (1906).

If, after final rejection, the examiner requires an amendment to the specification, this does not reopen the case. Final rejection of claims in a case closes the further prosecution not only of the claims under final rejection, but of others substituted therefor. Ex parte Casselman, 116 O. G., 2012 (1905), and Ex parte Novotny, 108 O. G., 1327 (1904).

In a finally rejected case, and in response to an argument, the examiner called attention to a new reference as showing features referred to in the argument. It was held that this citation reopened the case. Ex parte Lawton, 97 O. G., 187 (1901). This decision is based on Rule 68, which states that an applicant "may amend as often as the examiner presents new references or reasons."

No definite rule can be laid down to determine what constitutes a satisfactory showing of reasons why the

amendment was not earlier presented. In determining this question the record of the application should be considered, to see whether the application has been prosecuted in good faith and expeditiously. In Ex parte Schmidt, 171 O. G., 482 (1911), an affidavit was filed by the attorney of record, to the effect that matters contained in the amendment were not earlier presented because of the fact that the inventor had not earlier pointed out to counsel features covered by the proposed amendment. This was held to be a sufficient showing, as the case had been prosecuted in good faith and expeditiously. This case is not inconsistent with Ex parte Schrader, 120 O. G., 2127 (1906), where the petition was denied. There the attorney had filed a statement, stating that the inventor had not called the attention of the attorney to the subject-matter of the proposed claims. The proposed claims were presented to be substituted for the claims finally rejected by the examiner, which rejection was affirmed on appeal by the Examiners-in-Chief and also by the Commissioner.

The excuse that the inventor did not fully explain the subject-matter to the attorney must be carefully considered, as it can be given in almost any case, and if accepted as sufficient, the rule against amending after final rejection would be a nullity.

When a claim is admitted under Rule 68 upon a showing duly verified, the claim must be considered and acted upon by the examiner. He can not hold that it was admitted for appeal only. Ex parte, Meyer, 148 O. G., 1088 (1909).

Where claims are finally rejected and applicant alleges that such claims cover a feature not disclosed in the application, held, that applicant should be permitted to present for appeal claims which unquestionably read upon his disclosure. Ex parte Swanson, 21 Gour., 76-30 (Aug., 1909).

An applicant has no right to amend after decision on appeal except under unusual circumstances and where a proper showing is made. Even then a petition must be made to the Commissioner to reopen the case. Ex parte Auer, 116 O. G., 595 (1905).

AMENDMENT AFTER ALLOWANCE—RULE 78.

Let us follow the course of an amendment under Rule 78, from the time it is filed up to and including its final disposition. After being filed in the Application Division the amendment is sent to the Docket Clerk who then sends to the Issue and Gazette Division for the allowed application file, to which he attaches the proposed amendment, and the notice for the examiner's recommendation, all of which he sends to the examiner. The examiner will recommend that the proposed amendment be entered or not entered as the case may be—usually by endorsement on the proposed amendment—and returns the file with the attached parts, together with his recommendation, to the Docket Clerk, who will transmit it to the Commissioner. If the Commissioner approves the entry of the amendment, the Docket Clerk will immediately send the file and papers to the examiner who will cause the amendment to be entered. The file is then brought back to the Docket Clerk and the applicant or his attorney is notified that the amendment, having been recommended by the examiner, and approved by the Commissioner, has been entered. This letter bears the signature of the Chief Clerk. The Docket Clerk then returns the application to the Issue and Gazette Division. In case the examiner recommends that the amendment be not entered, he will write a letter stating his reasons therefor, and send a copy to the applicant, and return the file, together with the adverse recommendation, to the Docket Clerk, and if the Commissioner approves such adverse recommendation, the Docket Clerk will in like manner notify the applicant or his attorney that the adverse recommendation of the examiner, on the admission of the amendment, a copy of which was sent to him, has been approved by the Commissioner and will return the file to the Issue and Gazette Division.

The examiner is presumed to have jurisdiction of the case until the notice of allowance is sent to applicant. All proper amendments, therefore, received before the notice of allowance is sent, must be received and considered. This is analogous to the practice in interference cases, where the examiner retains jurisdiction of the case until the Examiner of Interferences declares the interference by

forwarding the notices to the several parties to the proceedings. Rules 100 and 102. If an examiner sends a case to issue and thereafter a proper amendment is received, which was filed before notice of allowance is sent, the amendment must be entered and considered. If the notice of allowance is sent, the examiner must withdraw the case from issue and enter and consider the amendment. This is the practice. But if the amendment leaves the case in condition for allowance, no reason is seen why it should not be entered under Rule 78 without withdrawing the case from issue, upon the initiative and recommendation of the examiner, and the approval of the Commissioner. This course would avoid the necessity of withdrawing the case from issue, and of sending a second notice of allowance.

After a case has been sent to issue and the notice of allowance sent, the time for amending, as a matter of right, has expired. The entry of claims under Rule 78 is not a matter of right, but is a privilege granted to applicants after such examination of the case by the examiner as he may deem necessary. Ex parte Goldsmith and Whiting, 184 O. G., 553 (1912).

The admission of amendments under Rule 78 rests largely with the examiner, whose recommendation will not be overruled except under unusual circumstances. It is well settled that an amendment will not be admitted after allowance, where it requires a reexamination of the case. Ex parte Holz, 154 O. G., 1411 (1910).

If the examiner reports that the claims are unpatentable, they will not be entered. Ex parte Langhaar, 159 O. G., 747 (1910). The applicant has no right to appeal from the examiner's decision holding that the claims are unpatentable and therefore the usual reason for explaining fully to the applicant the grounds upon which the conclusion is based does not exist. Ex parte Orndoff, 140 O. G., 1001 (1909). Rule 78 does not provide for prosecution of the case. The examiner has no jurisdiction and his report to the Commissioner is not an action in the case. No hardship or irreparable injury results from the refusal to enter the amendment under Rule 78, as the applicant may allow the application to become forfeited and then file a renewal, or he may abandon

the application in favor of a continuing application, and in this way, secure consideration of the amendment as a matter of right.

The claims in a certain case were finally rejected, appealed to the Examiners-in-Chief, and allowed. The case was passed to issue, and then withdrawn for the purpose of interference. The applicant was defeated in the interference and the claims were rejected under Rule 132. The applicant now presents an amendment canceling the rejected claims and adding new claims. What shall be done with the amendment? The amendment must be entered and considered. The case is not closed before the examiner, although it was closed before the appeal was taken. Withdrawing a case from issue for the purpose of interference reopens the case for further prosecution, and moreover the rejection under Rule 132 is a new ground of rejection. Ex parte Klepetko, 126 O. G., 387 (1907).

AMENDMENTS TO THE PETITION.

The entry of amendments to the petition of an application is governed by Order No. 1874 as modified by Order No. 1994. The petition in an application may be amended to correct names and addresses (other than post-office addresses), and titles of invention. To make a change in the post-office address, a letter signed by the applicant in person and giving his actual post-office address will be accepted. An applicant's post-office address in care of his attorney will not be accepted. Ex parte King, Com. MS. D., Mar. 23, 1900.

AMENDMENT OF THE DRAWINGS.

Where applicant desires to amend a drawing, he should file a photographic print of the original drawing and illustrate on this print or by means of a sketch the change in the original drawing that he desires to make. The print and sketch should then be filed accompanied by a written request for permission to amend the drawing as indicated. The examiner's response to this request should be in writing. Signatures to the drawing may be corrected and reference characters changed by the

office without filing photographic prints if the requirement for such corrections and changes appear in the examiner's letter.

Order No. 2112, of March 30, 1914, directs that—

> Hereafter, corrections and alterations in the disclosure of the drawings of pending applications will be made only by the draftsmen employed by the Patent Office. Inventors, attorneys, and examiners will be guided by this order. The Chief Draftsman will make a reasonable charge for such changes as may be necessary. (See Order No. 1958 of February 3, 1912.)
>
> The purpose of this order is to stop the constant mutilation of office records.

EXAMINER'S AMENDMENTS UNDER ORDER 1718.

Where the citizenship of the applicant is given in the oath, but omitted in the preamble to the specification, it may be supplied by examiner's amendment.

In applications otherwise ready for allowance, where the first name of the applicant is disclosed in the record but does not appear in the preamble to the specification, the examiner will insert the first or Christian name of the applicant in the preamble by examiner's amendment.

Examiner's amendments are a great convenience in making minor corrections, but care must be exercised so as not to expand this order to include amendments other than the correction of obvious informalities.

AMENDMENTS CONTAINING NEW MATTER.

The subject of new matter will be presented in another paper, and will not be treated in this paper further than to say that an amendment containing claims to new matter should be entered and rejected for that reason and all other reasons which are deemed applicable. Rice, 21 Gour., 56-22 (June, 1909).

If the amendment attempts to introduce new matter

into the specification but does not present claims for the new matter, the examiner should refuse to enter it. Ex parte Mothes, 113 O. G., 1146; and Ex parte Smith, 58 O. G., 1840 (1892).

If the amendment attempts to introduce new matter into both the specification and the claims, the entire amendment should be entered. The examiner should reject the claims and require the new matter in the specification to be canceled. New drawings, however, should not be entered until the question of new matter is finally determined. Ex parte Furness, 104 O. G., 1655 (1903).

December 10, 1914.

Application and Scope of Order No. 2010

A paper read October 1, 1918 before the Examining Corps of the United States Patent Office

by

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First Assistant Examiner, Division Two

WASHINGTON, D. C.
1918

Application and Scope of Order No. 2010.

When an application is filed which, in the opinion of the Examiner is a division of, a continuation of, or a substitution for a previously filed application, but which contains no reference to such prior application, the Examiner will make a proper reference to the prior application in the record and an appropriate entry upon the face of the file wrapper.

This is the substance of Order No. 2010, October 18, 1912, as modified by Order No. 2071, September 19, 1913.

In Order 2071 divisional applications are not mentioned specifically, but as they are merely a species of continuing applications the scope of the order is the same as Order 2010.

It is not difficult to recognize a divisional application.

The rules of practice disclose clearly the nature of a divisional application, but they do not define substitute applications, and continuing applications. Such information must be drawn from the decisions.

These questions may present themselves on any Examiner's desk, any day, and each one should be prepared to take the proper action, and make the proper endorsement on the file.

The requirement is so just, it is surprising to realize it is of such recent origin.

It is the simplest way by which the complete records of the prosecution of such applications can be lawfully thrown open to the public after patents issue thereon.

However, from the organization of the Patent Office until June, 1903, it was possible for an applicant to prosecute an application until it was ready for issue or allowed, make and file a clean copy of the contents of the patentable file, then abandon the parent application and receive a patent from this office which, as far as the records open to the public showed, was passed to issue without a criticism, or the citation of a reference.

The great injustice to the public of such a proceeding was generally recognized by the examining corps, commented upon frequently and greatly deplored, but there was no authority in the rules or in the decisions for preventing such an abuse.

These tactics were employed so frequently that, instead of being the exception, they became the settled practice of some attorneys and were resorted to every time they had a client who was willing to pay another filing fee, and the expense of preparing the clean application.

The circumstances which resulted in establishing the present practice arose in this manner:

Lewis and Unger filed an application claiming the invention of a process for cutting steel plates. Some of the claims of that application were finally rejected and, on appeal to the Board of Examiners-in-Chief, the final rejection was sustained. They then filed two new applications disclosing and claiming the same invention. Some of the claims in these two applications were finally rejected, but, upon appeal to the Board, the rejection was overruled and the claims were allowed. The Examiners-in-Chief suggested that all the claims be incorporated into a single application. Lewis and Unger adopted the Board's suggestion. All the claims were placed in a single case, and that case was passed to issue. Thereupon, after notice of allowance the objectionable practice of filing a new and clean record was resorted to, and a new application was filed which was a literal copy of the allowed case, but made no reference to the prior applications and, of course, eliminated all amendments, rejections, appeals, consolidations, etc., and, on the day after *that* application was filed, a formal abandonment of the allowed application reached the office. It was as follows:

> "We hereby abandon the prosecution of the above entitled application, without abandoning the invention described and claimed therein, as we are, today, forwarding to the Patent Office, for filing, another application covering substantially the same subject-matter."

It is apparent that, from the filing of the first or parent application to the issuing of the patent on the fourth application there would have been a continuous unbroken line of live applications, describing and claiming the same invention, securing to the patentees all the benefits which accrued from the filing date of the parent application, which should be open to public inspection, but all of which would have been concealed excepting the last one—the clean copy of the previously allowed application—if the old and vicious practice of getting a clean record, as it was called, had not been stopped.

This was such an extreme example of withholding information most valuable and necessary and to which, in consideration for the grant of the patent, every one interested or concerned was entitled, that it was submitted to the Commissioner of Patents by the Primary Examiner for instructions as to the action which should be taken. The question being: Shall the application be allowed without some reference to prior abandoned applications for which it was substituted?

June 24, 1913, Commissioner Allen handed down the decision which is the foundation of the present practice.

Briefly stated the reasons and conclusions in Ex parte Lewis and Unger, C. D., 1903-303 are:

The claims were allowed by the Board of Examiners-in-Chief. There is nothing in the new application to show that fact. If the case be passed to issue without a reference to the prior cases it would appear that it was allowed without the citation of a single reference. The date of filing printed in the patent would be misleading because the last application was a continuation of the prior applications. The language of the letter of abandonment is such that it is clear applicants intend to retain all the benefits resulting from the prior applications but they wish to conceal those applications from the public. This would mislead and deceive the public as to the record date to which the patentees were entitled. The office can not knowingly permit the patents issued to contain a false suggestion of fact which may mislead the public. Neither should the office conceal from the public the proceedings

which lead to the grant of a patent. All such proceedings should be open to the public. *It is held* that the present application should not be allowed without a reference to the prior applications and that there should be endorsed upon the file wrapper a statement that it is a continuation of those applications.

In January, 1905, Ex parte Taylor, Jr., C. D., 1905-45, was decided.

This was a case where an application was allowed and forfeited and a new application was filed for the same thing.

It was held that notice of the first case should be included in the second.

In April, 1905, Ex parte Britt, C. D., 1905-156, was decided.

In this case, an application was prosecuted to allowance, but was allowed to become abandoned, and thereafter a new application was filed for the same invention, and containing the allowed claims. It was held that there should be a reference in the new application to the abandoned application.

Give careful consideration to this case. The first application was abandoned—totally dead, yet a reference to it was required in a subsequently filed application by the same applicant for the same invention.

This ruling was probably based on the holding of the Supreme Court of the United States that if a party choose to withdraw his application for a patent, and file a new application for the same subject-matter the two applications are to be considered parts of the same transaction. Godfrey *vs.* Eames, 1 Wall., 317.

These three decisions established the practice upon which Order No. 2010 was based.

To correctly apply the order, we must be able to tell when applications are divisions of, continuations of, or substitutes for previously filed applications, because when an application is a continuation of or a substitute for an earlier application the record made in the parent application should be as much open to the inspection of the public as the record in the patented file. *In re* Doman, C. D., 1905-101.

Taking up the question of divisional applications, which are a species of continuing applications:

It is fundamental that a proper divisional application does and can contain only matter carved out of the original case. *Ex parte* Henry, C. D., 1893-88, 64 O. G., 299; *Ex parte* Kruse, C. D., 1910-119.

The addition of unessential details, such as braces for a frame, does not affect the status of an application as far as the question of its being properly divisional is concerned. Phelps *vs.* Hardy *vs.* Gatman & Stern, 77 O. G., 631, C. D., 1896, 70.

Nor does a mere enlargement or extension of a certain feature, whereby no additional function or capability is given the apparatus, prevent a case from being a divisional application. *Ex parte* Kayser, C. D., 1898-65; 83 O. G., 915.

But where an application contains matter divided out of a prior application and also contains other matter it is not a divisional application. *Ex parte* Hicks, C. D., 1903, 148; 104 O. G., 309.

In fact where there is any departure from the disclosure of the alleged parent case, the application can not be referred to as a division thereof. *Ex parte* Kruse, C. D., 1910-119; 157 O. G., 208.

Turning now to continuing applications:

For an application to be a continuation of another such as to warrant giving to the second the benefit of the first filing date, the proceedings relating to the two must be merged into a single proceeding. There must be a connection between the two which is warranted by law. Sarfert *vs.* Meyer, C. D., 1902-30.

The rule of continuity rests broadly upon the subject-matter of the invention and not upon the specific embodiment. Latterhead *vs.* Hanson, C. D., 1904-646.

Hence an application may be a continuation of an older application when the two have common subject-matter even though the later application contains matter which is a departure from that shown and described in the original application. *Ex parte* Kruse, C. D., 1910-119; Lorimer et al. *vs.* Keith et al., 205 O. G., 1555; Godfrey *vs.* Eames, 1 Wall., 317; Cain *vs.* Park, C. D., 1899-278; Latterhead *vs.* Hanson, C. D., 1904-646;

Lotz *vs.* Kenney, C. D., 1908-467; Von Recklinghausen *vs.* Dempster, C. D., 1910-365; Field *vs.* Colman, C. D., 1913-450; *Ex parte* Luten, C. D., 1913-165.

An application filed to take the place of another application subsequently abandoned is a continuation of the parent application. Lewis and Unger, C. D., 1903-303. *In re* Doman, C. D., 1905-101; *In re* Vacuum Specialty Co., C. D., 1909-88.

So is a new application filed, by an executor, during the life of the parent application. *Ex parte* Smith, C. D., 1888-24.

But an application disclosing and claiming subject-matter disclosed in a patent granted prior to the filing of such application can not be considered as a continuance of the prior application, since after the application has eventuated into a patent there is nothing left pending before the Patent Office upon which it could act or to which the later application could attach. Wainwright *vs.* Parker, C. D., 1909-379; *In re* Spitteler and Krische, C. D., 1908-374.

Neither can a second application be a continuation of a first or earlier application by the same inventor unless it contains the same invention. Green *vs.* Hall *vs.* Siemens *vs.* Field, C. D., 1889-110; *Ex parte* Luten, C. D., 1913-165; Field *vs.* Colman, C. D., 1913-450.

Likewise applications by joint applicants can not be continuations of applications filed by sole applicants, and vice versa; because the applicants in the two cases are different entities. Arnold *vs.* Vaughn, and Cabot *vs.* Arnold and Fisher, C. D., 1904-78.

Furthermore when an application is abandoned for failure to prosecute or otherwise, a second application thereafter for the same subject-matter is not a continuing application. Hien *vs.* Pungs, C. D., 1894-92. Carty *vs.* Kellogg, C. D., 1895, 83; *Ex parte* Britt, C. D., 1905-156.

The decision of the Supreme Court of the United States in Smith *vs.* The Goodyear Dental Vulcanite Co., C. D., 1877-171 does not establish a doctrine contrary to the last statement.

In that case Smith filed an application in 1855, prosecuted it until some time in 1856, and then did nothing until 1864, eight years afterwards, when he filed

a new application for the same invention, and the court held the second application was a continuation of the first. The explanation is:

Abandonment for failure to prosecute was not enacted as a part of the patent law until 1870. Consolidated Patent Act of 1870, sec. 32, 16 Statutes at Large, p. 198; R. S., 4894.

In the order under consideration three species of applications are named—divisional, continuous, and substitute.

It is believed that the attention already given to the first two is quite sufficient to enable one to establish their identity easily and certainly. However, the foregoing statements based on various decisions bearing on the subjects are sufficient authority for the following definitions for the terms divisional application and continuous application.

A divisional application is an application carved out of a prior application, which does not vary materially from the disclosure in the parent application. It must be filed by the person who filed the parent application or by his legal representative while the parent application is pending.

A continuous application is an application filed subsequently to another application, while the prior application is pending, disclosing all or a part of the subject-matter of the prior application and containing a claim to subject-matter common to both applications, both applications being filed by the same inventor or his legal representative. Putting it in a simpler way a continuous application is one which is entitled to the filing date of a prior application for a constructive reduction to practice.

But when the subject of substitute applications is taken up for consideration no line of decisions giving examples and definitions is found.

Divisional applications and continuing applications have been called substitute applications. In fact the term appears to be loosely applied to any application which takes the place of a prior application. Ex parte Lewis and Unger, C. D., 1903-303; Ex parte Taylor, Jr. C. D., 1905-45; In re Doman, C. D., 1905-101.

As far as now appears, all cases in which endorsements on the file wrappers are necessary to carry out the spirit and the letter of Order 2010 can be classified as divisional applications or continuing applications excepting the single species represented by *Ex parte* Britt—cases in which a period of abandonment intervenes between the filing of the first application, and the filing of the second application. During such period of abandonment no live case is before the office.

Doubtless the Commissioner had in mind this type of cases when he introduced the word "substitute."

Therefore, all applications affected by Order No. 2010, which are neither divisional applications nor continuing applications, should be termed substitute applications in the endorsement upon the file wrapper.

This being the case, the conclusion necessarily follows that Order No. 2010 is comprehensive enough to cover every instance where the public is entitled to examine the complete record of the proceedings in the Patent Office leading to the issuing of a patent when such record is not all in the patented file; and that one or another of the three terms—divisional, continuous, and substitute—will clearly designate every case in which the public has such a right.

MECHANICAL METHODS

A paper read October 8, 1914, before the Examining Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1914

Mechanical Methods.

The term "art" as used in the patent law is intended to include "methods" and "modes" of operation as well as "processes."

Mr. Justice Grier, in delivering the opinion of the court in Corning *vs.* Burden (15 How., 252), said:

> "A process *eo nomine*, is not made the subject of a patent in our act of Congress. It is included under the general term 'useful art.' An art may require one or more processes or machines in order to produce a certain result or manufacture. . . . But where the result or effect is produced by chemical action, by the operation or application of some element or power of nature, or of one substance to another, such modes, methods, or operations, are called processes. A new process is usually the result of discovery; a machine of invention."

As stated in Cochrane *vs.* Deener, C. D., 1877, 242; 11 O. G., 687; 97 U. S., 780:

> "A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. . . . The process requires that certain things should be done with certain substances and in a certain order; but the tools to be used in doing this, may be of secondary consequence."

The terms "process," "method," and "mode" are, to a certain extent, used interchangeably in the domain of invention and discovery; although the best usage would seem to indicate that the term "process" should be used when it is intended to refer to an operation including

some chemical or other similar elemental action or the action of an agency of nature.

The terms "method" and "mode" are employed more accurately where the operation intended to be defined, is mechanical and the various elements and parts suffer no change in composition.

The Supreme Court held in Risdon Iron and Locomotive Works *vs.* Medart et al., C. D., 1895, 330:

> "It may be said in general that processes of manufacture which involve chemical or other similar elemental action are patentable, though mechanism may be necessary in the application or carrying out of such process, while those which consist solely in the operation of a machine are not."

In this case, after discussing the cases of: Mowry *vs.* Whitney, 1 O. G., 499, 14 Wall., 620; Cochrane *vs.* Deener, C. D., 1877, 242; Tilghman *vs.* Proctor, C. D., 1881, 163; O'Reilly *vs.* Morse, 15 How., 62; New Process Fermentation Co. *vs.* Maus, C. D., 1887, 402; Bell Telephone case, C. D., 1888, 321, and American Bell Telephone Co. *vs.* Dolbear, C. D., 1883, 160, the court said:

> "It will be observed that, in all these cases, the process was either a chemical one, or consisted in the use of one of the agencies of nature for a practical purpose.
>
> "It is equally clear, however, that a valid patent can not be obtained for a process which involves nothing more than the operation of a piece of mechanism, or, in other words, for the function of a machine."

It may be remarked that this discussion of the Supreme Court followed a number of decisions which it had rendered in dealing with mechanical methods and processes as follows:

In Downton *vs.* The Yeager Milling Co., 1883, 434, 25 O. G., 697, it held a mechanical process of "manufacturing middlings-flour" unpatentable over references, but it does not appear to have considered it as relating otherwise to an unpatentable process.

In Eames *vs.* Andrews et al., C. D., 1887, 378, it held a "process of constructing wells" to be patentable and the patent to have been infringed. In Hoff et al. *vs.* The Iron Clad Manufacturing Co., C. D., 1891, 332; 55 O. G., 139, it was decided that claim 1 for a "method of forming the body of a coal-hod or other similar vessel," and claim 2 for an "article of manufacture," made by such method, had not been infringed, and while some doubt was expressed as to patentability over references, nothing was said as to the unpatentability of a mechanical method.

In Hoyt *vs.* Horne, C. D., 1892, 435, the following claim for a purely mechanical method was held to be valid and infringed:

> "The improvement in beating rags to pulp in a rag engine having a beater-roll and bed-plate knives, consisting in circulating the fibrous material and liquid in vertical planes, drawing the same between the knives at the bottom of the vat, carrying it around, and over the roll and delivering it into the upper section of the vat, substantially as described."

In Weatherhead et al. *vs.* Coupe et al., C. D., 1893, 203, this quoted claim was held to be for the function of a machine, but it was not intimated in the opinion that mechanical methods were unpatentable:

> "The improvement in the method of stretching hides, which consists in dragging the hide over a stretcher, and also over a friction table or beam, by means of a revolving roller, to which the hide is secured, as described, whereby as the hide is passed over the table or beam, the thicker portions of the hide are detained or made to lag by pressure applied to such thicker portions, to increase at such points the friction between the hide and the table, substantially as specified."

Risdon *vs.* Medart was followed in a few years by Westinghouse *vs.* Boyden, C. D., 1898, 444, 170 U. S.,

537, in which Mr. Justice Brown delivered the opinion of the court, saying among other things:

> "Risdon Locomotive Works *vs.* Medart and other cases assume, although they do not expressly decide, that a process to be patentable must involve a chemical or other similar elemental action, and it may be still regarded as an open question whether the patentability of processes extends beyond this class of inventions. Where a process is simply the function or operative effect of a machine, Corning *vs.* Burden, Risdon Locomotive Works *vs.* Medart, and other cases are conclusive against its patentability; but where it is one which, though ordinarily and most successfully performed by machinery, may also be performed by simple manipulation—such, for instance, as the folding of a paper in a peculiar way for the manufacture of paper bags or a new method of weaving a hammock—there are cases to the effect that such a process is patentable, though none of the powers of nature be invoked to aid in producing the result (Eastern Paper Bag Co. *vs.* Standard Paper Bag Co., C. D., 1887, 537, 41 O. G., 231, 30 F. R., 63; Union Paper Bag Machine Co. *vs.* Waterbury, 30 F. R., 389; Travers *vs.* Am. Cordage Co. C. D., 1895, 125, 70 O. G., 277, 64 F. R., 771);" and Mr. Justice Shiras stated in his dissenting opinion: "I can not assent to what is perhaps rather intimated than decided in the opinion of the court—that what is called a 'process,' in order to be patentable, must involve a chemical or other similar elemental action."

After Westinghouse *vs.* Boyden, above referred to, in which the majority opinion said in effect that it is still an open question whether claims to mechanical methods are patentable, came the decision The Expanded Metal Co. *vs.* Bradford et al., and The General Fireproofing Co. *vs.* The Expanded Metal Co., C. D., 1909, 521. The claim in the patent in suit read as follows:

> "The herein-described method of making open or reticulated metal work, which consists in

simultaneously slitting and bending portions of a plate or sheet of metal in such manner as to stretch or elongate the bars connecting the slit portions and body of the sheet or plate, and then similarly slitting and bending in places alternate to the first mentioned portions, thus producing the finished expanded sheet metal of the same length as that of the original sheet or place, substantially as described."

The most pertinent paragraph of this opinion is:

"We therefore reach the conclusion that an invention or discovery of a process or method involving mechanical operations, and producing a new and useful result, may be within the protection of the Federal statute, and entitle the inventor to a patent for his discovery."

In Corning *vs.* Burden, Mr. Justice Grier said:

". . . It is when the term process is used to represent the means or method of producing a result that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical combinations.

"But the term process is often used in a more vague sense, in which it can not be the subject of a patent. Thus we say that a board is undergoing the process of being planed, grain of being ground, iron of being hammered or rolled. Here the term is used subjectively or passively as applied to the machinery operated on, and not to the method or mode of producing that operation, which is by mechanical means, and the use of a machine, as distinguished from a process.

"In this use of the term it represents the function of a machine, or the effect produced by it on the materials subjected to the action of the machine. But it is well settled that a man can not have a patent for the function or abstract effect of the machine, but only for the machine which produces it."

It will be observed that the court did *not* directly say that methods "which are effected by mechanism or mechanicl combinations" are *not* patentable.

In the case of Ex Parte Shippen, C. D., 1875, 126, decided by the Commissioner of Patents, the claim was as follows:

> "The improvement in the art of manufacturing wooden shoes by machinery, hereinbefore set forth, which consists in cutting, shaping, and boring the blank by submitting it successively to the operation of mechanism substantially such as set forth."

The following quotation from that decision, although the holding be by a minor tribunal and prior in point of time, appears, in view of the Expanded Metal case to set forth in apt language, the present attitude of the courts and the Office:

> "What is set forth is a well-defined order of mechanical operations. The successive steps are all adapted to each other, and the operation performed on the block at one step fits it to receive the operation to be performed upon it at the next; and although the operation is wholly mechanical, and requires a peculiar set of instruments, yet the order in which the successive operations are performed is not inherent in the machinery.
>
> "The function of a machine is that operation which, when set in motion, it inevitably performs. Thus it is the function of a grinding-mill to comminute whatever is passed through it, of a lathe to give shape to bodies placed in it, or of an auger to bore. But where the operation of the machine, or of a series of machines, is supplemented by some new method of operation not contemplated in the construction of the machine, and not the inevitable result of its operation, and the new method subserves a new and useful purpose, it may amount to a patentable process, even though the operation depend necessarily upon the machinery. Such was the process

> claimed in the Voelter patent sustained by the court (5 Fish., p. 340), in which the mill or stone upon which the wood was to be reduced to fibre was old, and the novelty consisted in placing the wood in such a way that the fibre was torn transversely—the change in which the invention consisted being solely in the method of using the machine, which method was not contemplated originally in making the machine, did not necessarily result from its operation, required evident invention, and produced a new and improved result."

The opinion of the Court of Appeals of the District of Columbia, in the decision In re Weston, C .D., 1901, 290, 94 O. G., 1786, intimates that Risdon *vs.* Medart seems to have been misunderstood by some courts and by the Patent Office, as restricting the patentability of processes to those which involved chemical or other elemental action, and further states: "But we deem it unnecessary to go into that consideration; for we find no real antagonism between the two cases;" that is, between Risdon *vs.* Medart and Westinghouse *vs.* Boyden.

Whether there be an apparent conflict between the two decisions or not, a discussion of it becomes immaterial in view of the Expanded Metal case.

The Registration of Prints and Labels

A paper read April 29, 1915, before the Examining Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1915

The Registration of Prints and Labels

By

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Assistant Examiner of Trade-Marks and Designs,
U. S. Patent Office.

The registration of a print or a label is the registration of a claim of copyright. (Section 10 of the Copyright Act.) The provisions of the general copyright act, in so far as they are applicable, must be complied with before a valid registration can be obtained. The Copyright Act of June 18, 1874, provides *inter alia* that the copyrights of prints and labels shall be registered by the Commissioner of Patents. Section 3 of this act reads:

> "That in the construction of this act the words 'engraving, cut, and print' shall be applied only to pictorial illustrations or works connected with the fine arts, and no prints or labels designed to be used for any other articles of manufacture shall be entered under the copyright law, but may be registered in the Patent Office. And the Commissioner of Patents is hereby charged with the supervision and control of the entry or registry of such prints or labels, in conformity with the regulations provided by law as to copyright of prints, except that there shall be paid for recording the title of any print or label, not a trademark, six dollars, which shall cover the expense of furnishing a copy of the record, under the seal of the Commissioner of Patents, to the party entering the same."

The act of March 4, 1909, is silent upon the subject of prints and labels. Therefore, after July 1, 1909, the date on which this act went into effect, applications for the registration of prints and labels were refused by the

Patent Office on the ground that the act of 1874 had been repealed by the latter act. On December 22, 1909, the Attorney-General of the United States decided that the act of 1909 had not repealed the former act, in so far as it related to prints and labels, and that it was still the duty of the Commissioner of Patents to register copyrights of prints and labels. This ruling was affirmed by the Attorney-General on May 16, 1914.

A print or a label may be registered either by the author or proprietor who is a citizen of the United States, or by his executors, administrators, or assigns; or by an alien author or proprietor, or his executors or assigns, who shall be domiciled within the United States at the time of the first publication of the work. Registration will be granted to an alien author or proprietor when the State or nation of which he is a citizen or subject grants, either by treaty, convention, agreement or law, to a citizen of the United States the benefit of copyright on substantially the same basis as to its own citizens. (Section 8 of the Copyright Act.) It is therefore required that the citizenship of the author be stated when application is made by a proprietor (Rule 18).

The statutory requirements which cause the most difficulty and which are least understood are:

1. **Publication.**
2. **Notice of Copyright.**
3. **Descriptiveness.**
4. **Artistic Merit.**

These subjects will be discussed in the order mentioned.

PUBLICATION.

Prior to the going into effect of the act of 1909, application for registration had to be made before publication, and a prior publication was held to be such a donation to the public as to bar copyright protection. (Marsh et al. *vs.* Warren et al., 13 O. G., 7, 14 O. G., 678.) Section 9 of the act of 1909, however, provides in part:

> "That any person entitled thereto by this act may secure copyright for his work by publication

thereof with the notice of copyright required by this act; and such notice shall be affixed to each copy thereof published or offered for sale in the United States by authority of the copyright proprietor."

This section reverses the former practice and requires publication with notice of copyright before the filing of an application for registration.

The common misapprehension is that it is unlawful to place a copyright notice on a work before an application has been filed and registration secured.

The rules require that the date of publication with notice of copyright be stated in the application, and it is the practice to require that the day, month, and year be stated. The reason for this requirement is that the period of twenty-eight years protection begins to run from the date so set up and not from the date of registration. The question as to how long an applicant may delay after publication with notice of copyright before filing an application has not been judicially determined. The Register of Copyrights, however, has held that sixty days is the limit of time after publication in which to make application.

Any work which was in the public domain prior to July 1, 1909, may not now be protected by copyright. (See section 7 of the Copyright Act.) Many applications are refused registration on account of this provision, it being a common occurrence for proprietors of prints or labels to use them for several years before attempting to protect them by copyright.

A publication without notice of copyright, unless by accident or mistake, was a bar to copyright protection under the act of 1874. It would therefore appear that the publication of a label for any considerable time before placing a notice of copyright thereon would prevent the securing of a valid registration unless it could be shown that the omission was due to accident or mistake. (Pierce & Bushnell Co. *vs.* Werkmeister et al., 72 F. R., 54; and American Press Association *vs.* Daily Story Publishing Co., 120 F. R., 766.)

NOTICE OF COPYRIGHT.

The form of copyright notice used must conform exactly to the provisions of section 18 of the act, and it is obvious from the language of this section that Congress intended that only the forms so provided are to be considered valid. The courts have held that a notice which is lacking in any essential is no notice. (Hoertel *vs.* Raphael Tuck Co., 94 F. R., 844.)

It is the practice of the Patent Office to accept any one of the forms of notice provided by this section, probably for the reason that it has never been determined in which of the classes enumerated in section 5, prints and labels belong.

There are two improper forms of copyright notice which are frequently used. The first and most common is "REG. U. S. PAT. OFF." This is the form of notice of trade-mark registration, authorized by the Trade-Mark Act of 1905. The other form is "LABEL REGISTERED." Both of these forms are objected to as not complying with the statute, and their use is deemed sufficient ground for refusing registration. It appears that the publication of any copies without a notice of copyright is a donation to the public. Section 19 requires that the notice of copyright appear on each copy published.

DESCRIPTIVENESS.

Rule 30 of the Rules for the Registration of Prints and Labels, which is based on section 3 of the act, prohibits the registration of a label which is not descriptive of the article on which it is used. Its descriptiveness, however, may be either by words or by pictorial illustration. The word "REGINA" was held not to render a label descriptive of music boxes (*Ex parte* Regina Music Box Co., 100 O. G., 1112) while the representation of a keg such as is commonly used for beer was held sufficiently descriptive of malt liquors. (*Ex parte* Ruppert, 121 O. G., 2327.) In a recent case the words "IRISH EMBROIDERED STYLE" were held to be sufficiently descriptive of sheets, pillow cases, etc. The name of the proprietor of a label was held not to render the label

sufficiently descriptive. (*Ex parte* The American Wire Weavers' Protective Association, 94 O. G., 586.)

The term "article of manufacture" as used in the statute has been very broadly construed, and labels for spring water, poultry, eggs, and fruit in its natural state have been registered. In a recent case, however, the Commissioner ruled that a highway was not an article of manufacture. It would seem that the statute has been interpreted to mean articles of merchandise rather than strictly manufactured articles.

ARTISTIC MERIT.

Rules 29 and 30 define prints and labels as "artistic and intellectual productions." This question of artistic merit has been the cause of many appeals to the Commissioner of Patents, and in one instance was passed upon by the United States Supreme Court. In this latter case (Higgins et al. *vs.* Keufel et al., 55 O. G., 1139) the court held that a phrase descriptive of the goods (the words used were "WATERPROOF DRAWING INK") printed in ordinary type, did not constitute a label which could be protected under the copyright act. The use of a paraph under some of the words, or of printers' ornamentation, has been held not to render a label registrable. (*Ex parte* The Samuel Winslow Skate Mfg. Co., 131 O. G., 692, and *Ex parte* J. W. Howe & Son, 123 O. G., 1283.) The standard of artistic merit required is, however, very low, and any pictorial illustration or embellishment has been considered sufficient to warrant registration. In a recent case a label comprising printed matter and two circles, in each of which appeared the letter "G," was held to be registrable.

LABELS NOT REGISTRABLE.

The act incorporating the American National Red Cross makes it a misdemeanor for any unauthorized person or corporation to use the insignia of this society. Any labels, therefore, which contain such insignia are refused registration.

Prints or labels which bear portraits or names of living individuals are refused registration unless the consent of

such person is shown. (*Ex parte* John Dewar & Sons, Ltd., 98 O. G., 1037.) The reason for this practice is that it is against public policy for the Government to grant protection for the use of an individual's name or portrait without his consent.

TITLE.

The title of the print or label must appear upon the copies filed and must be stated in the application. (Rules 18 and 19, and *ex parte* Ruppert, 121 O. G., 2327.) An applicant, however, is not limited in his selection of a title and may use any word or phrase which appears on the specimens filed. In one case at least, applicant was allowed to write the title on the back of the copies. (*Ex parte* Pingree Traung Co., 197 O. G., 997.)

Appeal to the Commissioner of Patents from the action of the Examiner of Trade-Marks and Designs, refusing to register a print or label, may be taken without an additional fee. (Rule 31) and his decision refusing registration appears to be final. (U. S. *ex rel.* E. L. Moodie *vs.* Butterworth, 30 O. G., 97; Allen *vs.* U. S. *ex rel.* The Regina Music Box Co., 105 O. G., 747; and United States, *ex rel.* Lincoln Highway Association *vs.* Ewing, 213 O. G., 749.

April 29, 1915.

Processes, as a Subject of Invention

A paper read January 21, 1913, before the Examining Corps of the United States Patent Office.

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WASHINGTON, D. C.
1913.

Processes, as a Subject of Invention

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The statutory provision making processes one of the subjects of patent protection is not as definite or clear as that relating to machines, composition of matter, and articles of manufacture. The word "art" was used in the statute, and its meaning, or rather its exact scope in this relation, has caused much doubt and confusion of court decisions during the history of patent litigation. Even as late as 1895, we find in the Supreme Court decision Risdon Iron and Locomotive Works *vs.* Medart *et al.*, 158 U. S., 68; 71 O. G., 751, ground for doubt on one phase of the question, that is, the question of the patentability of purely mechanical processes.

Also in former times, there was much doubt as to where to draw the limit in another direction, that is, between a proper process and a monopoly of the use, even for a particular purpose, of any one of the principles of nature, and likewise, between a proper process and a statement of general notion or idea of some result to be accomplished but without specific way or steps of doing it, claims for which are sometimes called functional.

Patentably, a process has been defined by the Supreme Court as a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing (Cochrane *vs.* Deener, 11 O. G., 687, 94 U. S., 780), and—a process is an act or mode of acting (Tilgman *vs.* Procter, 102 U. S., 707).

The second part of the first definition and the second one as a whole especially set forth the vital elements

of a proper process, as being one or more acts, commonly called steps, which are performed. These steps are the actual positive things to be done by the operator in executing the process. They do not necessarily, and, in fact, in chemical processes seldom, if ever, represent all the numerous or secondary actions or reactions that take place as a result of the actual or primary steps performed. For instance, a claim for preparing a bleaching liquor might include only the single positive step of passing an electric current through an aqueous solution of sodium chloride. It would be entirely proper as a process claim though some half dozen chemical reactions would take place in the solution while the current passed. In chemical processes, it would be entirely impracticable to name as steps all that happens in the process as secondary actions.

In chemical processes the materials treated may be considered to enter into or patentably modify the steps. The process consisting of heating to 2,000° C. a mixture of calcium oxide and carbon would be a different process from that of heating to 2,000° C. a mixture of silicia and carbon; in one case, the result would be calcium carbide and in the other silicon carbide, two different products. And likewise, the step of mixing nitric acid and glycerine would constitute a very different process from that of mixing nitric acid and sodium hydroxide. These would constitute patentably different processes because a different chemical reaction results in each of the two cases which produce products widely different in their properties. This, however, is not considered to be true in the case of broadly mixing or otherwise treating inert materials. Thus, the step broadly of mixing gravel and tar to make a paving compound, while perhaps a proper process, is not patentably different from that of mixing granulated coal and tar to make fuel briquettes. Any patentability in the case of these latter examples would reside in the mixture and not in the mixing. This does not mean that in case some special result is derived from a particular way of mixing two or more ingredients even in non-chemical cases, there might not be patentability in the process.

On account of the indefinite scope of the word "art"

in the statute, it has remained for the federal courts, the tribunals of the Patent Office, and text writers to lay out such bounds as we have for this subject of invention.

One question though it now seems elementary and only of historical interest, caused much controversy in the early history of patent litigation; viz., should a person when he had discovered that a natural fact or principle of nature was capable of use for some purpose be entitled to claim the exclusive use of that agency for that purpose, or should he be limited to some specific way or mode of applying it; that is, to some steps to be performed by which the fact or principle was utilized and embodied in a working process or by constructing a machine depending upon the fact. It was finally decided that neither the facts themselves, nor the use thereof, were subjects of patents, since to allow such patents would obstruct instead of promote the advance of the different arts, many of which depend upon these very principles of nature for their existence.

The terms "elemental force," "scientific fact," "principle of nature," and even "principle" have all been used synonymously in this relation to designate these various facts or principles of nature. Careful distinction must be made, however, where the term "principle" is used not to confuse it with its use in a more general sense in patent law, that is, where it is used to refer to the plan according to which a process or machine operates, a mode of action, otherwise denoted the principle of the process or machine. In this sense it might include any number of primary or elementary facts. Whichever of these terms, and perhaps of other similar ones, is used in this relation, that is, as being something different from a patentable process, it means any of the facts relative to the properties of matter or actions of the various forces of nature, including in its scope all of the manifestations by results of the various physical and chemical forces such as mere mechanical energy, heat, light, electricity, magnetism, chemical affinity, gravity, and the energy involved in the various forms of cathode, radium, and similar rays or emanations.

The subjects of physics and chemistry and combinations of the two are made up of, and have for an object,

the classification of the many directly apparent properties of matter and characteristics of the above-named forces in order that theories and laws may be formulated leading to others not so apparent. All these facts relating to actions and reactions in the material world around us, are available as foundations for processes, but in themselves they are not subjects of patents. They are as building stones or structural units with which inventors may construct the purely artificial creations designated processes.

A process, then, may be said to be something artificial, while a principle or scientific fact is a thing of nature. For devising the former, a person may be given a patent; for discovering the latter, he may be given a doctor's degree or other reward, but there can be no patent for a mere principle or scientific fact.

The inventor may or may not be the discoverer of the chemical or physical facts or laws which he utilizes in devising his process. If the particular step or combination of steps which he employes in applying and utilizing the one or more facts be new, that is sufficient.

It would seem that the word "art" might be broad enough in scope to permit the granting of a patent for the exclusive use of one of these principles of nature for a particular purpose, that is, for the creation of a new art to the first discoverer thereof, as, for instance, the exclusive use of the electric current for writing intelligible characters at a distance, or transmitting sound or generating light, or for the exclusive use of high frequency electromagnetic waves for conveying intelligence, as in the wireless telegraph art, or for the exclusive use of the fact that hydrogen is lighter than air for the purpose of aerial navigation. These could properly be called new arts. This view was expressed in a very logical dissenting opinion in O'Riley *vs.* Morse. It was decided in that case, however, that the term art in the statute could not be allowed such broad scope, the court placing the reason therefor on the above-mentioned ground that to do so and thus close such large fields to invention would hinder rather than promote the advancement of the useful arts.

In the case of O'Riley *vs.* Morse, 15 How., 62, the Supreme Court announced the rule that the exclusive use of a principle of nature or scientific fact for a particular

purpose broadly was not a proper subject of a patent, that the most that could be recognized by the patent laws was some specific process or apparatus embodying or depending upon the fact.

This case involved the patent to Morse on the electric telegraph. In connection with the question, it is of interest to note that the mechanism of the original telegraph was very complicated compared to one of today for merely sending a single message at a time. It was not recognized at that time that messages might be sent by the now familiar hand key and received by ear alone, although transmission of mere signals was known; and, therefore, Morse devised an automatic machine employing devices similar to type which had to be set up in a holder adapted to be moved past a contact for making and breaking the current according to requirements of spelling out the words of the message and likewise an automatic machine for moving a tape past a marker worked by an electromagnet at the receiving end.

One of Morse's claims was considered of such scope as to be for the use of an electric current for marking intelligible signs at any distance. It is claim 8 of Reissue No. 117, June 13, 1848, worded as follows:

> "Eight, I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specification and claims; the essence of my invention being the use of the motive power of the electric or galvanic current, which I call "electro-magnetism" however developed for marking or printing intelligible characters, signs, or letters at any distances, being a new application of that power, of which I claim to be the first inventor or discoverer."

The court said as to this claim:

> "It is impossible to understand the extent of this claim. He claims the exclusive right to every improvement where the motive power is the electric or galvanic current, and the result is the marking or printing intelligible characters, signs, or letters at a distance."

"If this claim can be maintained, it matters not by what process or machinery the result is accomplished. For aught that we now know, some future inventor, in the onward march of science, may discover a mode of writing or printing at a distance by means of the electric and galvanic current, without using any part of the process or combination set forth in the plaintiff's specification. His invention may be less complicated—less liable to get out of order—less expensive in construction and in its operation. But yet, if it is covered by this patent, the inventor could not use it, nor the public have the benefit of it without the permission of this patentee."

"Nor is this all: while he shuts the door against inventions of other persons, the patentee would be able to avail himself of new discoveries in the properties and powers of electro-magnetism which scientific men might bring to light. For he says he does not confine his claims to the machinery or parts of machinery which he specifies, but claims for himself a monopoly in its use however developed for the purpose of printing at a distance. New discoveries in physical science may enable him to combine with it new agents and new elements, and in that manner attain the object in a manner superior to the present process, and altogether different from it. If he can secure the exclusive use by his present patent, he may vary it with every new discovery and development of the science, and need place no description of the new manner, process, or machinery upon the records of the Patent Office. And when his patent expires, the public must apply to him to learn what it is. In fine, he claims a manner and process which he has not described, and indeed had not invented, and, therefore, could not describe when he obtained his patent. The court is of opinion that the claim is too broad and not warranted by law."

"No one, we suppose, will maintain that Fulton could have taken out a patent for his invention of

propelling vessels by steam, describing the process and machinery he used, and claimed under it the exclusive right to the use of the motive power of steam, however developed, for the purpose of propelling vessels. It can hardly be supposed that under such a patent he could have prevented the use of the improved machinery which science has since introduced, although the motive power is steam and the result is the propulsion of vessels."

"Neither could the man who first discovered that steam might, by a proper arrangement of machinery, be used as a motive power to grind corn or spin cotton, claim the right to the exclusive use of steam as a motive power for the purpose of producing such effects."

"Again, the use of steam as a motive power in printing presses is comparatively a modern discovery. Was the first inventor of a machine or process of this kind entitled to a patent, giving him the exclusive right to use steam as a motive power, however developed, for the purpose of making or printing intelligible characters? Could he have prevented the use of any other press subsequently invented where steam was used? Yet, so far as patentable rights are concerned, both improvements must stand on the same principles. Both use a known motive power to print intelligible marks or letters; and it can make no difference in their legal rights under the patent laws, whether the printing is done near at hand or at a distance. Both depend for success, not merely upon the motive power, but upon the machinery with which it is combined. And it has never, we believe, been supposed by any one that the first inventor of a steam printing press was entitled to the exclusive use of steam as a motive power, however developed, for marking or printing intelligible characters."

"Indeed, the acts of the patentee himself are inconsistent with the claim in his behalf for in 1846 he took out a patent for his new improvement of local circuits by means of which intelli-

> gence could be printed at intermediate places along the main line of the telegraph and he obtained a reissued patent for this invention in 1848. Yet in this new invention the electric or galvanic current was the motive power and writing at a distance the effect. The power was undoubtedly developed by new machinery and new combinations. But if his eighth claim could be sustained, this improvement would be embraced in his first patent. And if it was so embraced, his patent for the local circuits would be illegal and void; for he could not take out a subsequent patent for a portion of his first invention, and thereby extend his monopoly beyond the period limited by law."

Attorneys for Morse had cited several cases alleged to support their contention that a claim of this scope should be sustained. Among these cases was a British case, Neilson *et al. vs.* Harford *et al.*, decided by the English Court of Exchequer. Neilson was the inventor of the process of supplying hot air blast to furnaces where before cold air had been used. He accomplished this by interposing between the blowing device and the furnace a receptacle or passageway through which the air passed on its way to the furnace and which could be heated by heat applied externally to the walls. This was found to be a very valuable way of operating furnaces of various sorts because the hot air resulted in the production of a much higher temperature in the furnace and reduced the ore much faster.

The Court of Exchequer had said that it had had much doubt whether the Neilson patent was not for the principle that heated air would produce better combustion than cold and intimating that, if so, the patent would be void, but stated that after much consideration it had concluded that it was not for a principle but for an apparatus embodying a principle. They said:

> "After full consideration, we think that the plaintiff does not merely claim a principle, but a machine embodying a principle and a very valuable one. We think the case must be con-

> sidered as if the principle being well known, the plaintiff had first invented a mode of applying it by a mechanical apparatus to furnaces and his invention then consists in this by interposing a receptacle for heated air between the blowing apparatus and the furnace. In this receptacle he directs the air to be heated by the application of heat externally to the receptacle; and thus he accomplishes the object of applying the blast which was before cold air in a heated state to the furnace."

The Supreme Court said as to this citation that instead of supporting the contention that a principle might be claimed, it rather denied it, since the Court of Exchequer specifically said that Neilson's invention would be considered not for a principle but for a machine embodying a principle; a mode of applying a known principle to furnaces by interposing a receptacle for heating air between the blowing apparatus and the furnace and further making it clear that if the patent had been construed as one for the exclusive use of a principle or fundamental law of nature, that is, the exclusive use of the fact that hot air resulted in higher temperatures than cold air, that the patent would not have been sustained. The court, therefore, denied that this citation in any way afforded any ground for sustaining such style of claim, citing with approval the case of Le Roy *et al. vs.* Tatham, 14 Howard, 156.

This case of Le Roy *et al. vs.* Tatham had been decided by the Supreme Court the year previous, that is, 1852, and is interesting, not so much on account of any direct decision by the court on the question of claiming a newly discovered natural phenomenon or principle, but on account of the variation of opinion and discussion of the question, both as between the lower court, which, in this case, was the Circuit Court of the Southern District of New York, and the Supreme Court, and between the members of the Supreme Court itself, since three of the members dissented.

The facts involved in this case were that John and Charles Hanson, the inventors and assignors to Tatham, had discovered an unknown property of certain soft metals, such as lead, that if a solidified or unmolten body of it be divided under non-oxidizing conditions and at certain temperature, and the parts be pressed together, they will reunite or weld perfectly to form an integral piece. This property of the metal was very useful in making lead pipe, since all that was necessary was a cylinder with a plunger at one end, and an opening with a mandrel or core, centered therein at the other. The core, however, had to be supported rigidly enough to avoid being moved out of center with respect to the opening. It was, therefore, supported by a bridge piece extending across the inner end of the die or outlet opening and this required that the lead in being extruded should divide to pass around the obstructing bridge member, and reunite to form the annular wall of the tube. This was where the newly discovered property of the lead came into use, since before that time the mandrel or core had as was thought necessary been supported from the plunger at the other end of the cylinder, or even beyond the plunger and extended through a hole in the plunger and thence on through the die opening, thereby not being rigid or stable enough laterally in the die to make uniform or concentrically walled tubing. The invention was of great practical value; the extruded lead being in better physical state than cast lead and the mandrel, being very rigidly and accurately held directly in the die by the bridge piece, made the pipe of mechanically perfect dimensions and uniformity. But it all depended upon the newly found principle or physical fact that solid lead would thus flow around a bridge piece, and again unite into a homogeneous mass to form a tube. This being true, we have a peculiar set of circumstances, for the same style of machine had been used before and in the same way for forming macaroni and in making clay pipe, and the claim was worded in a peculiar way as:

> "We do not claim as our invention and improvement any of the parts of the above described machinery, independently of its arrangement and

combination above set forth. What we do claim as our invention, and desire to secure, is the combination of the following parts above described, to wit, the core and bridge, or guide die, when used to form pipes of metal, under heat and pressure in the manner set forth, or in any other manner substantially the same."

The judge in the Circuit Court had instructed the jury in respect to patentability over the publications cited, showing the application of like machines in other arts, that:

"The result is a new manufacture, and even if the mere combination of machinery in the abstract is not new, still, if used and applied in connection with the practical development of a principle newly discovered, producing a new and useful result, the subject is patentable. In this view, the improvement of the plaintiff is the application of a combination of machinery to a new end—to the development and application of a new principle, resulting in a new and useful manufacture. That the discovery of a new principle is not patentable but it must be embodied and brought into operation by machinery, so as to produce a new and useful result. Upon this view of the patent it is an important question for the jury to determine, from the evidence, whether the fact is established, on which the alleged improvement is founded, that lead in a set or semi-solid state can thus be reunited or welded, after separation," and further—

"That in the view taken by the court in the construction of the patent, it was not material whether the mere combinations of machinery referred to were similar to the combinations used by the Hansons, because the originality did not consist of the novelty of the machinery, but in bringing a newly discovered principle into practical application, by which a useful article of manufacture is produced, and wrought pipe made as distinguished from cast pipe."

A verdict and judgment sustaining the claim was rendered.

It, therefore, appears that the lower court based the validity of this claim entirely on the newly found principle of nature, the physical fact that solid lead would thus divide and homogeneously unite under pressure, and the wording of the instructions seems very similar to the expression of opinion in the English case, Neilson *et al. vs.* Harford *et al.*, above referred to, and another on the same patent, Househill Company *vs.* Neilson. But we have the distinction between this case and the English cases that English patents do not to such extent depend on the exact construction of the claims, and, second, that the apparatus described in Neilson's patent was not old, as in the present case. The English court could, therefore, say in considering Neilson's patent that it was not for a principle, but for apparatus or process embodying a principle, and, therefore, as the apparatus and corresponding operation or function were novel, the patent was held valid. But no such latitude is allowable in American practice. Therefore when the present case was appealed to the Supreme Court on the ground that the above quoted instructions to the jury were erroneous, a majority of the court held that in view of the form of the claim, as being for the combination of the several mechanical elements when used to produce lead pipe, that the novelty of the machine alone was material to patentability, and that the principle of nature or physical fact involved in the behavior of lead could not be held to affect the question, that it was merely a case of double use. The court stated, however, in discussing the erroneous idea of the Circuit Court, that there was much confusion both in court decisions and in the text books about the distinctions between principles and processes, and as to patentability of the exclusive use of the latter. But the court stated positively that principles, fundamental truths, or facts of nature were not included in the scope of the term art of the patent statutes, and this would apply either to the appropriation for exclusive use and for a particular purpose of a known fact or principle or to the exclusive use in general of a newly found or discovered fact or principle. Mere discovery

of a natural fact or scientific truth which necessarily existed before as well as after being found, is not invention, but any step or steps directed to the application of one or more of these facts or principles is a subject of invention.

In Tilgman *vs.* Proctor, U. S. Reports, 102, page 707, 1880, we have another Supreme Court decision which discusses the subject of processes patentably considered.

Tilgman, on October 3, 1854, secured a patent, No. 11,766, for a process of separating vegetable or animal fats into their components, glycerine and fatty acid, by subjecting an emulsion of the fat in water to a temperature between 440° F. to 660° F., depending upon the particular fat treated and speed of reaction desired, under a pressure of 2,000 pounds per square inch. This resulted in a reaction of water with the fat to split it into glycerine and fatty acid, which separated when allowed to stand and cool into two layers which could be drawn off separately.

The single claim was worded as follows:

> "The manufacture of fat acid and glycerine from fatty bodies by the action of water at a high temperature and pressure."

This claim does not clearly set forth any positive steps performed, but merely refers to the action of water at high temperature and pressure.

The court construed it to mean subjecting to a high degree of heat, a mixture of fat and water, which construction involves the substitution of the words *subjecting to* for the expression *by the action of*, thereby making the claim more positive in terms of steps. After thus construing it, the court held that it was not for a principle or chemical fact—the fact that water at high temperature and pressure would decompose fat—but for a proper process. It said:

> "In the first place, the claim of the patent is not for a mere principle. The chemical principle, or scientific fact upon which it is founded is, that the elements of neutral fat require to be severally united with an atomic equivalent of water in order to separate from each other and become free."

Thus indicating that if the claim had been considered to be for a mere chemical fact, it would not have been valid.

The third important case along this line is the decision of the Supreme Court in the so-called Telephone Cases, 126 U. S., 1. The court rendered a single decision on five appeals from five separate circuit court cases, involving the two patents to Alexander Graham Bell, No. 174,465, March 7, 1876, and No. 186,787, January 30, 1877. One of these patents was based on the principle that if an iron diaphragm is vibrated in the neighborhood of an electro-magnet through which a current is flowing, undulations will be set up in the electric circuit which correspond exactly to the vibrations of the air which accompany vocal or other sounds. This patent also disclosed other ways of producing the undulating current, one of which consisted of a wire dipping into a bath of mercury to a greater or less extent according to the sound waves, which varied the resistance of the circuit to a current flowing through the wire and bath. The other patent involved the same general idea except in place of an electro-magnet, a permanent magnet surrounded by a coil was used and an undulatory current was generated by the nagneto effect of the vibrating diaphragm in the neighborhood of the coil and permanent magnet. Any one of these species of device could be used as the transmitter or sending instrument and either the first or third forms of instrument was used at the receiving end of the line where the undulatory current flowing through the coil vibrated the diaphragm to create corresponding sound waves.

The important question in this case was the scope of claim 5 of Patent No. 174,465, worded as follows:

> "The method of, and apparatus for, transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations similar in form to the vibrations of the air accompanying the said vocal or other sounds, substantially as set forth."

This claim is of very queer form according to our present practice. It seems intended to cover both process

and apparatus by the expression "method of and apparatus for" and it is very indefinite or incomplete as to what steps are included when considered as a process. It merely states, in substance, the method of transmitting sound by causing electrical undulations similar in form to the vibrations of the air accompanying the sound. The only step set forth is—causing electrical undulations, which obviously would not by itself transmit sound; perhaps the words "as herein described" used in the claim, were considered sufficient to involve other necessary steps. However, the court held that this was a valid claim to cover each of the above species of processes, and accompanying device. The court said:

> "In this art—or what is the same thing under the patent law, this process, this way of transmitting speech—electricity, one of the forces of nature, is employed; but electricity left to itself will not do what is wanted. The art consists in so controlling the force as to make it accomplish the purpose."
>
> "It had long been believed that if the vibrations of air caused by the voice in speaking could be reproduced at a distance by means of electricity the speech itself would be reproduced and understood. How to do it was the question. Bell discovered that it could be done by gradually changing the intensity of a continuous electric current so as to make it correspond exactly to the changes in the density of the air caused by the sound of the voice. This was his art. He then devised a way in which these changes of intensity could be made and speech actually transmitted. Thus his art was put in condition for practical use."

It seems, therefore, that the court did not regard Bell's patent as being for a mere principle, but for a process, although the claim is of rather vague form.

Even considering the indefinite form of claim in each of the three patents of Morse, Tilgman and Bell, there seems to be a difference in the intent or fundamental

idea between the claim of Morse and those of Tilgman and Bell.

Morse's claim is, in effect—

> ". . . the essence of my invention being the use of the motive power of the electric or galvanic current which I call electromagnetism however developed, for marking or printing intelligible characters, signs, or letters at any distances."

Tilgman claimed, in effect—

> ". . . decomposing fats by the action of water at a high temperature and pressure."

While Bell claimed in effect as to the process:

> "The method of transmitting sound as herein described by causing electrical undulations, similar in form to the vibrations of the air accompanying the said sound."

There is less difference between Morse's and Tilgman's claim than between Bell's and the other two. Bell's claim seems merely to be open to the fault of being for an incomplete process for transmitting sound. The only positive step included in his claim is, causing electrical undulations corresponding to sound waves, whereas a second important step would be necessary, that of causing sound waves corresponding to the electrical undulations produced. The claim could not be held to be for the exclusive use of any scientific fact or principle as such. It is not so stated. It is stated in the form of a step or act to be performed, while Morse's claim, on the other hand, is of different form, as boldly for the use of electromagnetism for marking characters at a distance. This is not stated in the form of some specific step or way of using the force or principle of nature, but for any or all ways of using it for that purpose; that is, for the exclusive use of a principle of nature.

Tilgman's claim, if transposed so as to be stated in the same order, would read, "I claim the action of water at high temperature and pressure for decomposing fats."

This brings the difference down to the mere difference

between Morse's expression, "the use of electromagnetism," and Tilgman's, "by the action of water at high temperature and pressure." The court, however, construed Tilgman's claim to mean, subjecting fat to the action of water at high temperature and pressure, which clearly makes a process out of it, and removes any doubt that one of the chemical facts of nature is being claimed; that is, the fact that hot water under pressure decomposes fats.

MECHANICAL PROCESSES.

Another question that has involved much controversy is whether processes may consist entirely of mechanical steps and actions as distinguished from involving some chemical reaction.

A series of cases along this line are Corning *vs.* Burden, 15 How., 267, 1853; Risdon *vs.* Medart, 1895, C. D., 330; Westinghouse *vs.* Boyden, 170 U. S., 537, and Expanded Metal Co. *vs.* Bradford, 214 U. S., 366.

The case of Corning *vs.* Burden, 15 How., 267, 1853, involved an alleged method of preparing puddler's balls for rolling according to patent to Burden, 1,890, Dec. 10, 1840. Two species of the machine were illustrated and described in the patent; one was formed of a revolvable drum and a stationary member extending about half way around the drum spaced somewhat eccentrically therefrom to give a gradually narrowing space between the drum and member from one end of the member to the other, so that when a puddler's ball was placed at the wider or mouth end of the space, it would be seized by the rotation of the cylinder and rolled between itself and the member to the narrow end of the space and be discharged as a consolidated and kneaded cylinder ready for the subsequent rolling operation. Another species involving a reciprocating wedge-shaped piece working adjacent a stationary surface accomplished the same result. The claim was worded as follows:

> Having thus fully made known the nature of my said improvements, and explained and exemplified the manner in which I construct the

> machinery for carrying the same into operation, what I claim as constituting my invention, and desire to secure by letters patent, is the preparing of the puddler's balls as they are delivered from the puddling furnace, or of other similar masses of iron, by causing them to pass between a revolving cylinder, and a curved segmental trough adapted thereto, and constructed and operating substantially in the manner of that herein described and represented in Figs. 2 and 3, of the accompanying drawings; or by causing the said balls to pass between vibrating or reciprocating tables, surfaces, or plates of iron, in the manner exemplified in Fig. 1, in the accompanying drawing, or between vibrating or reciprocating curved surfaces operating upon the same principle, and producing like result by analogous means.

The fact that two entirely different styles of apparatus were described, and others suggested, for carrying out the process indicates that there was a proper process involved, but expressions used in the case seem to indicate that the novelty was thought to be in the machine. In the preamble we find:

> "Be it known that I, etc., have invented an improvement in the process of manufacturing iron, which improvement consists in the employment of a new and useful machine for the rolling of puddler's balls, or balls prepared in the puddling furnace, and of other similar masses of iron."

and in the oath—

> "that he does verily believe that he is the original and first inventor or discoverer of the said machine."

The claim, however, is indefinite as to whether process or machine is claimed, but seems to incline to a process rather than to a machine in the statement that what he claimed as constituting his invention and desired to be secured by letters patent, was the preparing of the puddler's balls as they are delivered from the puddling

furnace, or of other similar masses of iron, by causing them to pass between wedging surfaces operating as described to produce the desired result. The court was in doubt whether the claim was for a process or machine and their discussion of the question was in such terms as to raise doubts as to patentability of mechanical processes.

The court decided that the patent should be held to be for the machine and not for a process. This conclusion seems to have been reached as a result of three reasons or circumstances; first, because Burden in his specification refers several times to his invention as being for a new and useful machine; likewise, in the oath, that he believed himself to be the inventor of the machine; and second, to what seems to have been an opinion that purely mechanical processes were not subjects of patents, that only those involving chemical or other elemental forces were; and, third, that processes were usually discovered rather than deliberately devised.

That part of the decision relating to the second and third reasons reads as follows:

> "Is the plaintiff's patent for a process or a machine?
>
> "A process, *eo nomine*, is not made the subject of a patent in our act of Congress. It is included under the general term 'useful art.' An art may require one or more processes or machines in order to produce a certain result or manufacture. The term machine includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result. But where the result or effect is produced by chemical action, by the operation or application of some element or power of nature, or of one substance to another, such modes, methods, or operations are called processes."
>
> "A new process is usually the result of discovery; a machine of invention."
>
> "The arts of tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores, and numerous others are usually carried

on by processes, as distinguished from machines. One may discover a new and useful improvement in the process of tanning, dyeing, etc., irrespective of any particular form of machinery or mechanical device, and another may invent a labor saving machine by which this operation or process may be performed, and each may be entitled to his patent. As, for instance, A has discovered that by exposing India rubber to a certain degree of heat, in mixture, or connection with certain metallic salts, he can produce a valuable product or manufacture. He is entitled to a patent for his discovery, as a process or improvement in the art, irrespective of any machine or mechanical device. B, on the contrary, may invent a new furnace, or stove, or steam apparatus by which this process may be carried on with much saving of labor and expense of fuel, and he will be entitled to a patent for his machine, as an improvement in the art. Yet A could not have a patent for a machine or B for a process, but each would have a patent for the means or method of producing a certain result or effect, and not for the result or effect produced. It is for the discovery or invention of some practicable method or means of producing a beneficial result or effect that a patent is granted, and not for the result or effect itself. It is when the term process is used to represent the means or method of producing a result, that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical combinations."

"But the term process is often used in a more vague sense, in which it can not be the subject of a patent. Thus, we say that a board is undergoing the process of being planed, grain of being ground, iron of being hammered or rolled. Here the term is used subjectively or passively as applied to the material operated on, and not to the method or mode of producing that operation, which is by mechanical means, or the use of a machine as distinguished from a process."

"In this use of the term, it represents the function of a machine, or the effect produced by it on the material subjected to the action of the machine. But it is well settled that a man can not have a patent for the function or abstract effect of a machine, but only for the machine which produces it."

"It is by not distinguishing between the primary and secondary sense of the term 'process' that the learned judge below appears to have fallen into an error. It is clear that Burden does not pretend to have discovered any new process by which cast iron is converted into malleable iron; but a new machine or combination of mechanical devices, by which the slag or impurities of the cast iron may be expelled or pressed out of the metal when reduced to the shape of puddler's balls. The machines used before to effect this compression were tilt hammers and alligator jaws, acting by percussion and pressure, and nobbling rolls with eccentric grooves, which compress the metal by use of the inclined plane, in the shape of a cyclovolute or snail-cam."

"In subjecting the metal to this operation, by the action of these machines, more time and manual labor is required than when the same function is performed by the machine of Burden. He saved labor, and thus produced the result in a cheaper, if not a better, manner, and was therefore the proper subject of a patent."

"In either case, the iron may be said, in the secondary sense of the term, to undergo a process in order to change its qualities, by pressing out its impurities; but the agent which effects the pressure is a machine or combination of mechanical devices."

This decision is interesting as showing the different views that have been taken of this subject of invention, although it is apparently overruled by the decision in Expanded Metal Co. *vs.* Bradford, 214 U. S., 366, since it is there held that purely mechanical processes may be

patentable; and it is not apparent but that an inventor might set to work to devise a process rather than to discover one. It would seem that such intentional development would usually be the case where the process involved the utilization in turn of several chemical or physical facts, as the chances of mere accidental performance of the process would be small. Where the process consisted of a single step it might happen that such discovery would take place.

Following this case, Corning *vs.* Burden, we find the case of Risdon *vs.* Medart, 158 U. S., 68, and 1895 C. D., 330, inclining even more to the position that a mechanical process could not be the subject of a patent. This case involved three patents; one for a process of manufacturing belt pulleys, and two for the pulley. The process patent is the only one which is of interest in this relation. It is Patent No. 248,599, of October 25, 1881, to Philip Medart.

This is a patent for a specific process of building up a belt pulley of separate parts instead of casting an integral wheel. It consists of axially boring a portion which constitutes the hub and spokes, that is, an integral spider. Then truing up the outer ends of the spokes in respect to the bore of the hub; then mounting a rim on the spokes and truing up the rim. Apparatus suitable for use in the process is shown and described in the patent. Claim 3 represents the complete process and reads as follows:

> "The herein described improvement in the art of manufacturing belt pulleys, which consists in centering the pulley center or spider, boring the hub thereof, grinding the center or spider concentric with the axis of the pulley, securing the rim concentric with the axis of the pulley, and then grinding or squaring the edges of the rim, substantially as set forth."

After reviewing several of its prior decisions, the court cited with approval Corning *vs.* Burden, 15 How., 252, and apparently concluded that because Medart's process was not a chemical process and did not consist in the use of one of the agencies of nature, it could consequently be

only the function of a machine and not patentable. Whether this process necessarily depends upon a particular machine and could not be performed by other machines or by hand does not seem to have been considered. No reason is apparent why it could not be so performed, that is, without a specific machine, or why it is not a proper process according to present practice. It may be noted here that the practice of the Patent Office granting these mechanical processes undoubtedly finally settled the law.

Another case often cited in connection with the question of mechanical processes and function of machines is that of Boyden Power Brake Co. *et al. vs.* Westinghouse *et al.*, and Westinghouse et *al. vs.* Boyden Power Brake Co. *et al.*, 170 U. S., 537 and 1898 C. D., 443.

This case involved the question of infringement of claims 1, 2, and 4 of the patent to Westinghouse, 360,070, for a "Fluid Pressure Automatic-Brake Mechanism." The question related to a rather specific feature of the air brake in general and for that reason a careful construction of the claims was necessary. The court took into consideration that the patent was not of the pioneer type. The claims were drawn to apparatus of which claim 2 will serve as illustration.

> "Claim 2. In a brake mechanism, the combination of a main air pipe, an auxiliary reservoir, a brake-cylinder, and a triple valve having a piston whose preliminary traverse admits air from the auxiliary reservoir to the brake-cylinder, and which by a further traverse admits air directly from the main air pipe to the brake cylinder, substantially as described."

It was urged that this claim be construed to be for a process so as to broaden its scope sufficiently to cover the alleged infringing device, but the court held that, if considered to be for a process, there might be doubt of its validity, since it still seemed to be an open question whether processes which did not involve chemical or other similar elemental action were valid, citing Corning *vs.* Burden, 103 U. S., 461, and Risdon *vs.* Medart, 158 U. S., 680, as indication of the negative contention, and Eastern

Paper Bag Co. *vs.* Standard Paper Bag Co., 30 F. R., 63; Union Paper Bag Machine Co. *vs.* Waterbury, 39 F. R., 389; and Travers *vs.* American Cordage Co., 64 F. R., 771, as indication of the affirmative; and further that if it should be attempted to construe the claim in the direction of a process, it would apparently not be such, but merely the function of the apparatus or machine which would be an unpatentable subject. However, the court held that they would not assume or decide either of the above questions since the claim was clearly drawn to a mechanism and could not in any way be construed to be for a process.

This case, therefore, still left the patentability of mechanical processes in doubt so far as the Supreme Court is concerned. Eleven years later, however, we find a decision by this court, which clearly and definitely states that such processes are proper subjects of patents. That case is the case of The Expanded Metal Co. *et al. vs.* Bradford *et al.*, and The General Fireproofing Co. *vs.* The Expanded Metal Co., 214 U. S., 366, and 143 O. G., 863, 1909, C. D., page 521, which involved a patent to John F. Golding, 527,242, for a process of forming expanded sheet metal suitable for use in plastering and cement work. The process claimed is purely mechanical, yet clearly not dependent on any particular machine for performing it. The process is very clearly set forth in a claim of good form as follows:

> "The herein described method of making open or reticulated metal work which consists in simultaneously slitting and bending portions of a plate or sheet of metal in such manner as to stretch or elongate the bars connecting the slit portions and body of the sheet or plate, and then similarly slitting and bending in places alternate to the first-mentioned portions, thus producing the finished expanded sheet metal of the same length as that of the original sheet or plate, substantially as described."

Looking at the subject now, there appears to be no logical reason why the propriety of such processes should be questioned; but as has been shown certain decisions

had assumed, although they did not perhaps expressly decide, that they were not patentable.

The court disposed of the question in this case by the statement that—

> "an invention or discovery of a process or method involving mechanical operations and producing a new and useful result may be within the protection of the Federal Statute and entitle the inventor to a patent for his discovery."

This statement by the Supreme Court would seem to settle the question. It may be noted that quite a number of lower court decisions had clearly announced this conclusion of which *In re* Weston, C. D., 1907, 290, by the Court of Appeals of the District of Columbia, and those cited above in the case of Westinghouse *vs.* Boyden are good examples.

Still a different type of alleged process is that involving motors or other apparatus operated by electricity, steam, hydraulic pressure, etc. We have a few decisions along this line which are instructive. One is—*In re* Creverling, C. D., 1905, 684, appealed to Court of Appeals of the District of Columbia from the Patent Office, relating to an alleged process of regulating an electric generator or dynamo. The application included description and drawings of the particular apparatus and no description of any process, the mere operation of the device being the alleged process.

Briefly, the invention consisted in varying the field or other circuit of the machine by means of an electric motor device in which an independently determined magnetomotive force is opposed by a magnetomotive force which is a function of the current generated. There is thus produced a resultant magnetic field whose polarity is dependent upon the current generated. Exposed to the action of the resultant magnetic field is a member (a motor armature) which tends to set up an independent magnetic field, producing motion in a positive or negative direction and thereby causing the generator to be regulated in the manner desired. This final regulation was done actually by the movement of a rheostat included in circuit with the field of the

generator and mechanically connected with the motor armature. An example of the claims is—

> "The herein described method of regulating the output of a generator which consists in producing mechanical motion by the combined action of a flux which is the resultant effect of a magnetic motive force which is a function of the current generated, and a determined magnetomotive force and another flux substantially as specified."

The court said that since applicant already had a patent on a machine operating on this principle, the alleged process was so associated with the machine that it would be unpatentable thereover. Incidentally, the court also said that the claims, if considered to be proper process claims, were incomplete for the purpose alleged because they omitted one of the essential steps of the process, that of the operation of the rheostat, and that they would be unallowable on that account.

A very recent case, however, seems to be in conflict with the above conclusion as to what constitutes a true process aside from the function of the machine and patentable thereover. This case is Century Electric Co. *vs.* Westinghouse Electric and Manufacturing Co., 191 Fed. Rep., 350, 207 O. G., 1249. It relates to patentability of a process over apparatus, where the two seem to be very closely associated. The two subjects were allowed to the same patentee in different patents. They were patents 511,915 and 555,190 to Nicola Tesla for an electric motor and process.

Claim 1 of patent 511,915 for the process reads as follows:

> "The method of operating electro-magnetic motors having independent energizing circuits as herein described, which consists in passing an alternating current through one of the energizing circuits and inducing by such current the current in the other energizing circuit of the motor as set forth."

The machine as set forth in claim 1 of patent 555,190 reads as follows:

> "In an electro-magnetic motor, the combination of independent energizing circuits, one adapted to be connected with a source of alternating current, the other arranged in inductive relation to the said first circuit whereby the motor will be operated by the resultant action of the two circuits as set forth."

The court in this case held the above process claim to be a proper one. It seems to me that *In re* Creverling is the more logical of the above two cases, and that the process claim in the second case is entirely useless.

In some cases where an inventor has devised a machine or apparatus, it may be that there is also a proper process involved in connection with it which the device is capable of carrying out. But to entitle him to claim the process, it must be such as not to be dependent exclusively on that particular apparatus and the burden is upon applicant to point out as example another apparatus capable of carrying out the process unless the suggestion of such other apparatus is within the reach of persons skilled in that art. In these cases, unless the Examiner can readily see that other apparatus might be used, such examples should be required, or more directly the claim should be held to be merely the function of the apparatus.

> American Lava Co. *vs.* Stewart, 155 F. R., 731, 1909, C. D., 557.

In re Cunningham, 1903, C. D., 524, Court of Appeals of the District of Columbia, related to an alleged process of coaling ships at sea. It consisted of making a flexible connection between two ships to serve as a conveyor from one ship to the other, then creating tension on the cable to hold it in proper stretched condition. This tension was created by propelling one ship from the other. There had already been allowed a claim on the apparatus and the process claim rejected read as follows:

> "The improvement in the art of coaling ships in the open water herein described, the same

consisting in making a flexible connection athwartships, or abeam, between the ship to be supplied and the ship from which the coal is to be taken at sufficient distance apart to permit rolling and pitching of both ships without interference with each other, and creating sufficient lateral pressure between one of the ships and the surrounding water on the side toward the other ship to maintain them at such distance apart."

The court was very positive that there was no patentable process set forth; that the alleged process could not be conceived of independently of the particular apparatus of which it was merely the function or use.

MISCELLANEOUS FEATURES.

Where a process is an obvious and apparently the only patentable way of producing an article, the invention is said to reside in the article and not in the process. The Examiner may suggest this idea to applicant where the invention seems to be claimed in the wrong form. *Ex parte* Trevette, 1901, C. D., 170, and Mica Insulator Co. *vs* Commercial Mica Co., 157 F. R., 90.

A situation similar to this is that if a patent is taken out for an article defined by a process of producing it, that patent is a bar to the allowance of any subsequent separate patent claiming that process.

> Mosler *vs.* Mosler, 127 U. S., 354, 43 O. G., 1115, 1888, C. D., 420, and Oval Wood Dish Co. *vs.* Sandy Creek Mfg. Co., 1894, C. D., 216.

Another point of importance in treating process claims is the rule that in applying references it is not sufficient that a prior apparatus might have been used to carry out the process, but it must appear that it was actually intended to perform the process, or that such use would have been obvious to a person skilled in the art in which it was used. The mere existence of a piece of apparatus does not necessarily suggest all the possible uses of it, and any process which would be outside the range of those which would obviously suggest themselves

upon use of the apparatus would be patentable over it. This is merely the converse of the rule that the use of an old device in an entirely new and non-analogous art may amount to invention.

The former of these rules was announced in the Supreme Court decision—The Carnegie Steel Co. *vs.* The Cambria Iron Co., 1902, C. D., 592. The patent involved was that to Jones, 404,414, June 4, 1889. It involved the question of anticipation of the process for producing Bessemer steel directly from blast furnace iron without intermediate cooling, involving as the important step the feature of maintaining a large bath of molten metal replenished by successive portions of molten metal direct from one or more blast furnaces and discharged from the bath in small quantities into the converter to be blown. The important thing was the fact that there was maintained at all times in the mixing bath a mass of metal, many times greater than the successive additions and discharges.

The claim involved was:

> "In the art of mixing molten metal to secure uniformity of the same in its constituent parts preparatory to further treatment, the process of introducing into a mixing-receptacle successive portions of molten metal ununiform in their non-metallic constituents (sulfur, silicon, etc.), removing portions only of the composite molten contents of the receptacle without entirely draining or emptying the same, and successively replenishing the receptacle with fresh ununiform additions, substantially as and for the purpose described."

Several prior devices cited might have been operated so as to follow the process, but the court did not find sufficient proof to show that they had been so operated or that their use would have suggested the Jones process; hence the above rule.

This rule was followed also in Loew *vs.* German-American, 164 Fed. Rep., 855.

AGGREGATION.

In general, the same rules apply to processes as to apparatus in determining whether an alleged process is in fact a single process, that is, a proper combination of steps, or whether it is made up of parts which are independent of each other and consequently an aggregation, and also, if the association of steps forms a proper combination, to determine whether the novelty is in the combination, as a whole or merely in one part of it. If merely in a part, then the claims should be limited to the part that is new.

As in machines and apparatus, the elements making up the process, that is, the steps and any groups of steps which form sub-processes, must cooperate with each other to produce a new result which is different from the mere sum of the results of the steps if performed separately. There must be some degree of direct dependence upon each other.

A very difficult question peculiar to processes arises where several processes which are old and which belong to arts that are distinct are associated with the object of using up by-products. A favorite expression for this style of associated processes is "cyclical processes." They are often very important commercially and the continuance of some chemical industries depends upon such special association. A large number of these alleged processes will be found to sift down to a purely commercial proposition. The several distinct processes involved not mutually affecting the operation each of the other; each would operate in the same way whether associated or not. This condition of affairs seems plainly not to fulfill the established rules as to patentable combinations and constitutes only an aggregation, and this would seem to follow whether the individual processes were new with applicant or old. If, however, as happens in some cases, they do affect each other so as to produce a new result, then they are, of course, patentable as a new process.

Mond *vs.* Duell, decided by Court of Appeals, D. C., 1900, C. D., 298, announces the simple rule that asso-

ciation of two old processes does not constitute invention where no new result is produced.

This case involved the following claim:

> "The herein described improvement in the manufacture of zinc, which consists in lixiviating roasted zinc ores by a solution of caustic soda or potash, electrolyzing the solution of zinc oxide thus obtained with an anode of sodium or potassium amalgam, and causing deposit of zinc on a metallic cathode, as specified."

Both main parts of this alleged process were old; first, that of making a zinc solution by lixiviating roasted zinc ores with caustic soda or potash, and, second, that of electrolyzing the zinc solution in the same way. No new result would be expected from this mere association and apparently applicant could show none.

The rule that each claim should set forth all the steps necessary to make a process or subprocess, which is sufficiently complete to be operative to accomplish some useful purpose, is as important in processes as the analogous rule in machine cases requiring a complete combination or subcombination. As was said in the case of Oxnard & Baur, C. D., 1899, 170, decision by the Commissioner of Patents:

> "An applicant may properly in one case have claims covering the principal or essential steps of his process and other claims including those steps, together with other specific steps which are not absolutely necessary to the performance of the process, but which add to its efficiency or make its operation more perfect. The mere inclusion in one claim of a step not included in another claim does not, therefore, make those claims cover entirely different processes which can not properly be retained in one case."

The invention involved was a process of making sugar, and claim 2 included as an intermediate step in that process "agitating and reducing the temperature of this second masse-cuit," whereas claim 1 omitted that step.

The court held that this step was not so vital to the process that its inclusion or omission would materially affect the principle or operation thereof.

A similar rule was announced in the case of *In re* Creverling, C. D., 1905, 684.

The above remark does not refer to claims related as process and sub-process, but to an integral process not susceptible of division into any distinct sub-processes. It is well established that process and sub-process may stand together where the sub-process is complete for some useful purpose, and where it does not belong to a specific and recognized art of its own.

As to alternate species of process either as complete or sub-processes, there is no reason why the same rules do not apply as in machine cases in accordance with *Ex parte* Eagle, 1870, C. D., 137.

Another situation which often arises in process cases is where, after a series of steps, two or more products may result and two or more processes may be necessary to continue the treatment of these two products. It might be said that the process splits or branches out into a plurality of different lines; these different lines considered separately might or might not form recognized independent subjects of invention; if they do, of course they should be divided; if not, they may stand together.

A system of transacting business is not a subject of a patentable process, though made up of a series of transactions to be performed in sequence.

Hotel *vs.* Lorain, 160 Fed., 467.
Fowler *vs.* City of New York, 121 Fed., 747.

The law requires that an applicant state the necessary steps, whether or not he is able to state the scientific principles upon which the process depends. But it is always desirable, if possible, to discover and state the principle involved, provided it can be correctly determined, because if an alleged invention be made and the case be prepared on purely empirical methods of research the applicant may omit to describe an essential point or step which makes the process operative but which in the course of arbitrary performance of the process had been done unintentionally or merely incidentally to some other

step which was thought important, but which was not. This would not happen if the theory of the process were thoroughly understood; and in that case also claims can be framed in the most direct and broadest terms to protect the important points of the process. This relates to chemical processes principally, since the principles underlying purely mechanical processes are usually obvious from mere description of the process. Wherever principles are set forth as the foundation of a process, the examiner should carefully verify them by comparison with published statements of reliable authorities, if available, and if not available, or if they vary therefrom, then by affidavits stating facts found to be true by tests performed by reliable experts in that line.

The weight put upon the theory or principles on which a process depends is illustrated by the case of Steward *et al. vs.* American Lava Co. *et al.*, C. D., 1909, 557, in which the United States Supreme Court concluded in regard to the patent to Dolan, 589,342, Aug. 31, 1897, Acetylene-Gas Burner, that—where an application as originally filed did not differentiate from the prior art either in construction or theory of operation and an amendment thereto was filed, without verification by the inventor, introducing a new theory of operation and containing process claims covering such theory, such claims are invalid as covering new matter.

The particular amount of detail in the directions for carrying out the steps depends upon the nature of the process; if it is obvious from a mere mention of the general steps necessary to the process how they might be carried out, this is sufficient; if not obvious to one skilled in the art, then the inventor must give specific directions both as to details of steps and apparatus suitable for one way of performing the process. A very convenient kind of drawing to illustrate a chemical process is a diagrammatic one; that is, one in which the minute details of the apparatus are not shown, but in which mere outlines of the elements are used and legends are applied to the different elements to show the reactions or steps taking place in that part.

A patent for a process including steps for the per-

formance of which there is no known means, would be void even where the means could probably be devised, but where devising the means would necessitate invention.

Dountown *vs.* Yeager Milling Co., 17 O. G., 906.

Where a patent clearly shows and describes a machine use of which necessarily involves the performance of the process, it constitutes a bar to the grant of a patent on that process.

New Process Fermentation Co. *vs.* Koch, 28 O. G., 535.

January 21, 1915.

NEW MATTER

A paper read February 1, 1917, before the Examining Corps of the United States Patent Office

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WASHINGTON, D. C.
1917.

New Matter

By

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It was found very early in the development of the Patent System that provision must be made for the admission of amendments to applications for patents. The admission of amendments straightway involves the question how far such amendments should be allowed to change the application as originally filed.

On one hand, it is obvious that a meritorious invention may be made, but the application for patent may be prepared by persons not expert in such matters, and therefore filed in condition not fully complying with the technical requirements of the Patent Office. This consideration is of far greater importance at present than in the early history of the Patent Office, when applications were much fewer, and (in general) less complex in subject-matter.

On the other hand, it is equally obvious that limits must be put upon the right to amend. This would be true even if no rights of any sort were acquired until the actual issue of the patent, for otherwise an unlimited number of inventions might be successively introduced and patented on one application.

According to our present Patent Law, however, the applicant for patent *does* acquire an important right upon the date of his completed application, for he is given this date as that of constructive reduction to practice of the invention. Hence, in justice to the public and to other applicants, he should not be permitted, after filing, to change the application in any way such as to affect the nature of the invention, or as it is called, to introduce new matter.

In the Rules of Practice of the Patent Office, No. 32, Edition of 1870, it is stated that:

> "All amendments of the model, drawings, or specification, in the case of original applications, must conform to at least one of them as they were at the time of filing of the application."

This was repeated in the edition of the following year, with the further statement that—

> "further changes than this can only be made by filing a new application. If the invention does not admit of illustration by drawing, amendment to the specification may be made upon proof satisfactory to the Commissioner, that the proposed amendment is part of the original invention."

In the edition of 1877 this rule was substantially repeated, except that the term "further changes than this" is amplified by "involving a departure from the original invention."

In 1879 this rule, now Rule 69, further states that "the affidavits prescribed in Rule 47 may or may not be sufficient" to prove that the proposed amendment was part of the original invention.

In the present Rules of Practice, of 1916, the rule, now No. 70, is as follows:

> "In original applications all amendments of the drawings or specifications, and all additions thereto, must conform to at least one of them as it was at the time of filing of the application. Matter not found in either, involving a departure from the original invention, can not be added to the application even though supported by a supplemental oath, and can be shown or claimed only in a separate application."

In the case of Ex parte Snyder, C. D., 1882, p. 22, the contention was made by applicant that amendments should be allowed at will before the application is taken

up for examination. This was denied by the Commissioner, who said:

> "This rule, then, (Rule 69) attaches upon the filing of the application, which occurs when the applicant has completed his application, as provided in Rule 31. The application then receives its serial number, and is placed upon the files for examination. It is then an application in full standing, and thereafter amendments must conform with the rules governing the amendment of applications. The time when an application is taken up for examination is a variable and arbitrary date, and depends solely upon the state of business."

The reasons for the prohibition of new matter in an application were considered in decision of the Supreme Court of the United States in Railway Co. *vs.* Sayles C. D., 1879, p. 349. It was there stated:

> "It will be observed that we have given particular attention to the original application, drawings and models filed in the Patent Office by Thompson and Bachelder. We have deemed it proper to do this, because, if the amended application and model filed by Tanner five years later embodied any material addition to, or variation from, the original—anything new that was not comprised in that—such addition or variance can not be sustained on the original application. The law does not permit such enlargement of an original specification, which would interfere with other inventors who have entered the field in the meantime, any more than it does in the case of re-issues of patents previously granted. Courts should regard with jealousy and disfavor any attempts to enlarge the scope of an application once filed, or of a patent once granted, the effect of which would be to enable the patentee to appropriate other inventions made prior to such alteration, or to appropriate that which has in the meantime gone into public use."

The subject of permissible changes to the application is treated in decision of the Court of Appeals of the District of Columbia, Hulett *vs.* Long, C. D., 1899, p. 446. It is there stated:

> "It is a well settled and long established practice in the Patent Office to allow amendments to be made under proper circumstances to supply omissions and defects in the original specification and claims as filed which have occurred by mistake, oversight, or inadvertence, or even the want of requisite skill in the preparation and presentation of the case to the Office, and the making of such amendments should not be allowed to operate to the prejudice of the claim or claims of the applicant if made in due and reasonable time and in good faith. In many cases the necessity for amendments to supply omissions and defects is not discovered until the application and specification have been subjected to the critical examinations of the experts of the Office, and both the statute law and the Rules of Practice contemplate the making of all necessary amendments and alterations to supply defects and omissions in the presentation of the case, and where amendments have been allowed it should be presumed that they were properly allowed and upon satisfactory showing to the Office that it was by mistake, oversight, or inadvertence, or want of sufficient skill in the preparation of the application that the omission or defects had occurred and not by design to present a new and essentially different claim to invention from that described in the original application made for the purpose of overreaching and defeating a rival invention."

In this decision reference was made to decision of Mr. Commissioner Marble in Ex parte Snyder, C. D., 1882, p. 22:

> "He (the applicant) may be permitted, upon proper occasion, to supply suitable connections, to add a spring to a pawl, a handle to a crank, a belt to a pulley, teeth to a wheel, an outlet to a closed receptacle, or other manifest defects or

> omissions in features essential to the operation of the invention or to the completeness of the disclosure, and which were caused by a clerical error of the draftsman, or the unfamiliarity of the inventor with official forms. These amendments, supplemental in their nature, may be made as completing the invention imperfectly shown and described. They add to the invention disclosed some part or feature which agrees with the construction and operation already presented."

This naturally leads to the question as to how far an applicant may be permitted to amend in order to remedy an inoperative disclosure. In practice, perhaps this is the most perplexing and embarrassing question that is presented to the Examiner. Applications for really valuable inventions are sometimes filed in a very defective shape. On one hand, the inventor should, if possible, be allowed the benefit of his filing date. In many cases a new application would be barred by public use or foreign patent, and in other cases the inventor dies soon after the filing. Hence the whole invention is lost unless it can be predicated on the original disclosure. On the other hand, if the application clearly fails to show a reduction to practice of the invention, the inventor must take the consequences. He is clearly not entitled to complete his invention after filing, and yet have the benefit of the filing date.

This subject is treated in decision of Mr. Commissioner Allen, Ex parte Willits, C. D., 1905, p. 107. In this case applicant wished to add to the disclosure "a small port or opening" in order to make the device operative. It was stated:

> "There is nothing in *Ex parte Snyder* which warrants the conclusion that new matter may be inserted in a case whenever it is done for the purpose of making operative a supposedly inoperative device. New matter is no more admissible for that purpose than for any other purpose. It seems perfectly clear that if new matter were admitted for that purpose, applicants could come to this Office with their applications before perfecting their inventions and before having a

well-defined conception of an operative device, and by subsequent experiments and amendments based thereon so change their applications as to cover inventions made after the applications were filed. The law is well settled that the patent should include only the invention as disclosed in the application as filed. Subsequent discoveries and improvements can not be included therein, whether those improvements are intended to make the device operative or merely to make it perform its functions better.

"Mere clerical or draftsman's errors may be corrected where the errors are clear from the application itself; but changes can not be made in the application based on allegations of fact not shown by the record.

"In the present case it is by no means certain that the 'small port or opening' referred to in the objectionable amendment is necessary to make the device operative. If that device is now inoperative, it could be made operative in other ways. The applicant should not be permitted to describe at this late date that specific construction, since if it would be perfectly obvious to one reading the original description there is no necessity for the specific description, and if it would not be obvious it clearly includes matter not suggested originally."

A test for new matter was given by the Board of Examiners-in-Chief in Interference No. 38,322, Alger *vs.* Bailey, July 6, 1915. Like all tests of legal questions, this test is more in the nature of a *statement* of the problem than a *solution* of it in any particular case. It is always a matter for individual judgment to determine how an abstract principle bears upon the concrete facts at hand. The quotation is as follows:

"The real test of new matter is believed to be whether those skilled in the art, reading the original application and drawing with reasonable care and attempting to give effect thereto would naturally make the device in the manner in question."

So far it has been assumed that the change to be made is that of addition or of substitution, which is, in fact, usually the case. It may happen, however, that even the *omission* of elements may involve a departure from the original invention. In *Ex parte Cook*, C. D., 1901, p. 19, claims were rejected on references and the Commissioner held that, by reason of a certain pipe shown, the operation of the device was not different from that of prior devices, and that it did not operate in the manner set forth in argument of the appellant. It was further said that if this pipe were not present, there might be force in applicant's contention as to difference in operation.

Applicant then sought to erase from the specification and drawing all reference to the pipe in question. It was held, however, that applicant had not shown a device omitting the pipe, and consequently had not shown a device which would operate in the manner set forth. To quote from the decision:

> "That pipe completely neutralizes the tendency of the other parts and arrangement of parts to produce the operation and result now described. The omission of the pipe A4 from the device, therefore, would change entirely the function and operation of the other parts, and virtually produce a new device. In other words, the omission of that pipe from the case would produce a different invention and involve a departure from the original disclosure."

A contrary decision was reached in the case of *Ex parte* Smith and Hoyland, C. D., 1900, p. 176, when certain flanges were omitted in a substitute drawing. It was held:

> "No claim is now made to these flanges, and they are not included as an element of any of the claims. The illustration of them is unnecessary since the device is obviously operative without them. No useful purpose would be served by illustrating and describing them, and their omission does not change in any way the function and operation of the other parts of the device. They

> are merely additional and unnecessary elements which may or may not be used, and therefore their omission does not involve new matter."

An important consideration is the bearing of a supplemental oath on the subject of new matter. In decision *Ex parte McDougal*, C. D., 1882, p. 7, it was held:

> "Under Rule 47 an applicant may introduce into his application by amendment a part of the invention originally made which was not incorporated into the application either as part of the specification or claim, if he swears that the matter which he desires to introduce into his application and make a part thereof was a part of his original invention. Under this practice, however, the Examiner will enter the date of the new oath on the face of the file wrapper and change the date of the completion of the filing of the application to agree therewith."

The practice above indicated is now obsolete. The tendency has been to restrict more and more the function of a supplemental oath, and it may in the future be abolished altogether. If admitted or required, it has no effect on the effective date of filing, and according to present Rule 70, it affords no ground for the introduction of new matter.

Hitherto it has been assumed that the disclosure is that of the description, drawing, and model, if any. It must further be considered what basis for disclosure is furnished by the *claims*. Judicial decisions upon both sides of the question may be found, as in the following instances:

In the case of *Ex parte Gugler*, O. G., 160, p. 775, an original claim was not objected to by the Examiner as indefinite, but was objected to on the ground that it suggested a variation not disclosed in the original specification and drawings. It was held:

> "Either the objection is unfounded or the claim is sufficient basis for an amendment to the showing to make it correspond with the modification suggested in the claim."

A different conclusion was expressed in decision of the Commissioner *In re Heany*, O. G., 171, p. 983. In that case the entire original specification was removed, except two claims and part of a third. It was held:

> "A claim alone, disconnected from its specification, is a most uncertain thing, and can not constitute a just criterion for a specification or written description, and can not, therefore, be rightly used as a foundation upon which a specification can be erected."

Everything relating to new matter in an original application is equally applicable to a divisional application thereof, which depends upon the disclosure of the original, and has the benefit of the original filing date. This was formerly held to be true of continuing applications also, which were held to lose their right to be so considered if they contained anything technically involving new matter. A change of procedure in this respect was occasioned by decision of U. S. Court of Appeals, D. C., Field *vs.* Colman, O. G., 193, p. 221, where it was held:

> "The right of an applicant, by substituted application, to relate back to the date of filing the first application for reduction to practice broadly depends upon whether the substituted application is for the same invention as that disclosed in the original application, not that the specific disclosure of the first and second applications may be different or even patentably different if generically they relate to the same invention."

The Office practice in regard to new matter differs according to whether it is sought to be introduced in the description, drawing, or claims. At one time it was common to refuse to admit such changes, or to suspend action on the case until they were cancelled. The present practice is based on decisions of the Commissioner in *Ex parte Soley*, O. G., 91, p. 1616, and in *Ex parte Furness*, O. G., 104, p. 1655. In the *description*, an

amendment presenting new matter is entered, but applicant is required to cancel it. All claims whose interpretation is affected by the changed description should be rejected on this ground. In the drawing, the changes should *not* be made at first. The affected claims should be rejected, as in the previous case, subject to appeal. If applicant prevails upon appeal to any tribunal, then the changes may be made upon the drawing. If the desired change is in the *claims* it should be entered, but the claims rejected. Appeal may be taken as from rejection on other grounds.

It should be noted that new matter may not affect the claims already in the application, and yet may be made the basis of future claims in the application or in a division thereof. This is well brought out in the case of Brill and Brill *vs.* Hunter, O. G., 96, p. 641, decided by the Commissioner. In this case Hunter originally showed a single plate spring for a motor, and stated that a coil or other form of spring could be substituted for it. In a new application filed as a division, Hunter showed a special arrangement of coil springs. This was refused by the Examiner, but admitted by the Examiners-in-Chief on appeal, apparently on the ground that no claims were made to this feature, but that it was introduced only for purposes of illustration. Nevertheless, claims were afterwards made to this feature for interference with Brill and Brill, and Hunter sought the benefit of his original application as fixing the burden of proof of priority. The Commissioner held that the decision of the Examiners-in-Chief no longer applied to the changed conditions, now that the admissibility of the new showing had become of vital importance to the rights of the other party.

February 1, 1917.

The Statutory Grounds of Rejection

A paper read March 22, 1917, before the Examining Corps of the United States Patent Office

BY

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WASHINGTON
1917

The Statutory Grounds of Rejection

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In the following pages the object will be to group the various grounds of rejection according to their arrangement in the Revised Statutes. The sections of the statute will appear in numerical order; under these the subjects will be taken up in the order in which they are mentioned in the particular section under discussion; and under these main subjects the various branches will usually be considered in what seems to be their logical order, except under the subject of invention, where the branches will be considered alphabetically.

This paper is by no means exhaustive of any of the subjects treated, and the plan as outlined will make it necessary at times to briefly cover, from another viewpoint, the ground gone over in papers read by others before the examining corps, but this will be avoided as far as possible.

Section 4886.

INVENTION.

Attitude of Judges.

As regards the merits of an invention the attitude of an examiner should be the same as that of a judge, and he should regard the patentee's problem as of a time antedating the application, and should, therefore, not too readily accept the *ex post facto* wisdom of the bystander. (Railway Supply Co. *vs.* Hart Steel Co., 217 O. G., 699.)

Benefit of Doubt.

It has been the general policy of the law to extend to an inventor the benefit of any doubt with respect to the

presence or absence of invention. (Jones *vs.* Evans, 207 O. G., 609.) The Commissioner would be fully justified in reversing this rule where an applicant has prolonged the prosecution of his application for a period of years, knowing that the device covered thereby has gone into public use. (*In re Pope*, 225 O. G., 739.) It has also been held that the rule of reasonable doubt applies rather to the existence and method of operation of an alleged anticipation than to the question of patentability over such an anticipation once established. (*Ex parte* Pope, 222 O. G., 1055.)

Considerations Affecting the Presumption of Patentability.

Advantages resulting from a novel arrangement or device are persuasive of invention (Jones *vs.* Evans, 207 O. G., 609; Horton Mfg. Co. *vs.* White Lily Mfg. Co., 208 O. G., 655; Cadillac Motor Car Co. *et al. vs.* Austin, 222 O. G., 379) even if the patentee at the time of making his application did not know of the advantages or failed to express them. (Morgan Engineering Co. *vs.* Alliance Machine Co., 157 O. G., 1244.)

Affidavits that deal more in conclusions and general expressions of opinion than in fact are entitled to no weight. (*In re* Garrett, 122 O. G., 645.)

Article of Manufacture.

An article of manufacture is no more patentable without invention than a machine. (*Ex parte* Wattles, C. D., 1873, p. 50.)

Departure from Prior Teachings of the Art.

Idea Likely to be Discarded at First Thought.

Where these conditions exist it is usually safe to assume that the idea is not obvious. (Pieper, Pieper, and Ritter *vs.* The S. S. White Dental Mfg. Co., 220 O. G., 349; National Tube Co. *vs.* Mark *et al.*, 209 O. G., 329.)

Durability, Economy, and Efficiency all contribute to the conclusion that invention is present. (Union Carbide Co. *vs.* American Carbide Co., 160 O. G., 493; *In re* Eastwood, 144 O. G., 819.)

Failure of Others skilled in the art after repeated efforts is evidence that the discovery required more than mechanical skill. (Expanded Metal Co. *et al. vs.* Bradford *et al.*, 143 O. G., 863.)

Inference From Same Solution of a Problem by a Number of Persons.

The same solution of a problem by many persons indicates that no great exercise of inventive talent was called into play. (Scale Co. *vs.* Scale Co., 119 O. G., 1586.)

Novelty—Popularity—Satisfaction of a Well-Recognized Need—Utility.

A transfer ticket fulfilling all these conditions was held to involve invention, although very simple in structure. (Cincinnati Traction Co. *vs.* Pope, 204 O. G., 675.) Novelty and utility, however, do not constitute the only test of invention. (Boss *vs.* Thomas, 162 O. G., 1183.)

Popularity.

Extensive Use is evidence of utility, but not conclusive of patentability. (Boss *vs.* Thomas, above.)

Advertising—Business Ability—Exploiting.

Extensive use secured by such means is of no value in determining the question of patentability. (Hyde *vs.* Minerals Separation, Limited, *et al.*, 210 O. G., 397.)

Displacement of Rivals will not make that patentable which is clearly not so. (*In re* Heintz, 151 O. G., 1014.)

Popularity Notwithstanding Increased Price was regarded as pregnant evidence of novelty, value, and usefulness, in Columbia Metal Box Co. *vs.* Halper, 216 O. G., 664.

Tardy Discovery of a Useful and Needed Device indicates invention (*In re* Eastwood, 144 O. G., 819; Miehle Printing Press and Mfg. Co. *vs.* Whitlock, 218 O. G., 1155), but mere lapse of time does not. (Brill *vs.* Washington Railway and Electric Co., 215 U. S., 527; Æolian Co. *vs.* Wanamaker, 221 F. R., 666.)

Transfer and Adaptation of Old Device to New Situation.

Clearer proof of invention in making the necessary adaptations is required if the transfer is from an analogous art than if from a remote art. The value of such adaptations should also be considered. (Potts *vs.* Creager, 70 O. G., 494.) Certain devices are common to the arts as a whole because they are adapted for use in many situations. (*Ex parte* Morgan, 176 O. G., 275; *In re* Morgan, 179 O. G., 577.) After a device from one art has been adapted and incorporated into a machine in another art it is not invention to adapt an equivalent device from the same art to the same machine. (Crown Cork and Seal Co. *vs.* Sterling Cork and Seal Co., 218 O. G., 875.)

Simplicity in an Old and Highly Developed Art is often the highest evidence of inventive genius. (Railroad Supply Co. *vs.* Hart, 217 O. G., 699.)

Simple Changes Where Theoretical Judgment in Advance is Not Convincing allow less room for assuming that there is no invention than under ordinary conditions. (Cadillac Motor Car Co. *et al. vs.* Austin, 202 O. G., 1259.)

Small Articles may be patentable though the differences are slight. (Thomas *vs.* Steward, 202 O. G., 1259.)

The State of the Art at the Time an invention is made is what determines patentability. The state of the art may be shown by a patent, a printed publication, or other proof. (Millett and Reed *vs.* Duell, Commissioner of Patents, 96 O. G., 410.)

Well Developed Art.

A patent for a lifting-jack was held void although it was observed that this art affords slight opportunity for inventive genius. (Elite Mfg. Co. *vs.* Ashland Mfg. Co., 234 O. G., 374.)

Tests for Determining the Existence of Invention.

Aggregation—Combination.

An aggregation of elements is not patentable, while a combination is patentable if novel. In Pickering *vs.* McCullough (104 U. S., 310) it was held that in a patentable combination of old elements, all the constituents must so enter into it that each qualifies every other. It

has since been held to be sufficient if the elements are associated in a unitary structure and these cooperate to produce either a new mode of operation or a new result or the old result in a modified and new way. (Railway Supply Co. *vs.* Hart Steel Co., 217 O. G., 699.)

Mediation of Operator or Thing Operated Upon may be the only tie by means of which the elements coact. (Krell Auto-Grand Piano Co. *vs.* Story & Clark, 206 O. G., 313.)

Mediation of Operator.
Governed by Rules of Conduct.

Printed waiters' slips and a ruled record sheet, together with the promulgation of rules for their proper use, were held to be of doubtful patentability. (Hotel Security Checking Co. *vs.* Lorraine, 155 F. R., 298.)

It has also been held that a calculating machine which will not unfailingly give correct results, but requires elaborate rules and calculations for deducing the correct results from the indicated results, is not an operative device. (Carlin *vs.* Crumpton, 228 O. G., 1093.)

Combination Broadly Old.
Invention in Element Thereof.

This is a proper ground of rejection, but the Examiner should cite references to show the old combination. (*Ex parte* Mumford, 206 O. G., 878.)

Omission to Specify Relation of Elements Where the Result Depends Upon Such Relation makes the claim cover a mere aggregation. (*Ex parte* Shipman, 220 O. G., 1720.)

Incomplete Combination—See Utility, below.

Article Defined Only by the Source from Which the Material is Obtained.

Claims so defining the article are unpatentable. (*Ex parte* Cake, 188 O. G., 807.)

Change of Material is not patentable (Union Hardware Co. *vs. Selchow,* 112 F. R., 1006) unless it involves a departure from the prior teachings of the art (Edison

Electric Light Co. *vs.* U. S. Electric Light Co., 61 O. G., 564) or is accompanied by the discovery of new and unknown properties, or the discovery that long-sought-for results can be achieved. (Union Hardware Co. *vs.* Selchow, above.) Incidental changes in structure or in method of construction do not make the change of material patentable. (Drake Castle Pressed Steel Lug Co. *vs.* Brownell & Co., 123 F. R., 86.)

Compact and Convenient Arrangement of parts may be patentable. (*Ex parte* Child., 231 O. G., 919.)

Discarding Elements of Prior Devices may be patentable if the machine prior to such change was not arranged to operate in the same way as afterward, although possibly it was capable of being made to so operate. (Eck *vs.* Kutz, 132 F. R., 758.)

Discovery of a Defect and Supplying a Remedy, Though the Latter is Obvious may be sufficient to constitute invention. (Miehle Printing Press & Mfg. Co. *vs.* Whitlock, 218 O. G., 1155; Hobbs *vs.* Beach, 94 O. G., 2357.)

Double Use.

It is not invention to use an old machine for a new purpose. (Roberts *vs.* Ryer, C. D., 76, p. 439; Northwestern Fire Extinguisher Co. *vs.* Philadelphia Fire Extinguisher Co., 18 Fed. Cases, 394; *In re* McNeil and Sturtevant, 126 O. G., 3424; Ransome Concrete Machinery Co. *vs.* United Concrete Machinery Co., 161 O. G., 754.) But the person who takes the device and, by improvements thereon, adapts it to a different industry, may draw to himself the quality of inventor, and if the transfer be to a remote art and supercedes other methods, the courts will look with a less critical eye upon the means employed in making the transfer. (Potts *vs.* Creager, 70 O. G., 494.)

Making in Distinct Parts That Which Was Before Made in One Piece does not ordinarily involve invention. (*Ex parte* Thurston, 117 O. G., 2361).

Making in One Part That Which Was Before Made in Several Parts does not involve invention unless the change produces a more useful result. (Canada *vs.* Michigan Malleable Iron Co., 124 F. R,, 1486).

Mechanical Skill—New Result.

Mere mechanical skill is not invention, but if a new result is produced there is more than mechanical skill. (*In re* Merrill, 199 O. G., 618; Jones *vs.* Evans, 207 O. G., 609.)

Omission of a Step from a Process with an Improved Result is patentable. (Lawther *vs.* Hamilton, 42 O. G., 487.)

Reversal of Parts is not invention. (*In re* McNeil and Sturtevant, 126 O. G., 1345.)

Substitution of Equivalents is not invention. (Walker on Patents, Section 36.)

Replacing an Archaic Device in a Combination with a Modern One is not invention. (*Ex parte* Pope, 222 O. G., 1055.)

State of the Art—Combination of References.

Whenever a claim is rejected on a combination of references the real ground of rejection is lack of invention, and the references constitute evidence of the prior art, from which the question of invention may be determined. For example, when all the elements of the claim are not found in a single patent and two or more references are required to show the invention, the ground of rejection is not prior patenting, but want of invention. Under proper restrictions, some of which are stated below, this is a legitimate ground of rejection, the essential thing being that the state of the art shows lack of invention. (Keene *et al. vs.* New Idea Spreader Co., 230 O. G., 1185; Floorsheim *vs.* Schilling, 137 U. S., 64; Dilg *vs.* Borgfeldt, 189 F. R., 588; *Ex parte* Allport, 220 O. G., 1374). It is believed that this rule holds good even if the combined references would, if taken separately, present different statutory grounds, such as a patent claiming substantially the rejected combination, in view of a publication or a patent disclosing but not claiming an equivalent element of the patented combination.

All Elements of a Combination or Their Equivalents Must Appear in a Single Reference. (Ottumwa Box Car Loader Co. *vs.* Christy, 209 O. G., 683; *Ex parte* McCollum, 204 O. G., 1346.) Of course this rule does not apply to aggregations.

Reorganization of Old Elements, taken from different references, is patentable, where the structures can not be put together by the exercise of mechanical skill. (*Ex parte* Whitelaw, 219 O. G., 1237; *Ex parte* McCollum, above.)

Novelty in Organization or Result. If such a condition exists the combination should not be rejected on a combination of references. (*Ex parte* McCollum, above.)

Combining Patent and Prior Invention—Application for the Latter Filed Later than Application for the Anticipated Patent, is proper when taken together they show lack of invention. (Westinghouse *vs.* Chartiers Valley Gas Co., 435 F. R., 582.)

Combining Two Patents, Applications for Both Copending with Application for the Anticipated Patent but of earlier filing date, was permitted in support of the defense that the patentee of the patent sued upon was not the first and original inventor. (The citation in this case has been lost. The writer would be pleased if one of his readers could furnish it to him. The initials of the anticipating patentees are C. and H., and that of the anticipated patentee is McC.)

Prior Patents to Patentee—One Pending Concurrently With and the Other Patented More than Two Years Prior to Application for the Patent in Suit.

This combination of references was held to defeat the patent in Karl Keifer Machine Co. *et al. vs.* Unionwerke A. G., 218 F. R., 847.

Prior Foreign Patent to Applicant for Substantially Same Thing in Connection with Old Devices. See *Ex parte* Meloon, cited under section 4887, below.

"Has Invented"—Completion of Invention.

The wording of section 4886, "Any person who has invented" of course requires that the person who obtains a patent must have completed the act of invention. This subject will be treated under sections 4904 and 4920.

Inoperative Devices.

Devices like perpetual motion machines are inoperative because they are incapable of performing any useful function, even though they will run when power is

applied. Such devices lack utility and may be rejected on that ground. Other devices are inoperative because the inventor has failed to notice or to remedy some defect that keeps the device from operating at all, such as a short-circuited electro-magnet or a mechanism that will lock itself and break when power is applied. Devices inoperative in the latter respect also lack utility, but are often regarded as incomplete inventions, especially when presented as proof of reduction to practice. If the defect can be remedied without the exercise of invention, the applicant may be permitted to change his description and drawings.

NOVELTY.

A new assemblage of old elements should not be rejected for lack of novelty even if it is only an aggregation. (Walker on Patents, Section 66.) Novelty is not negatived by any prior accidental production of the same thing unaccompanied by knowledge on the part of the producer sufficient to enable him to repeat that production. (Walker on Patents, Section 67.)

Old Article Made by a New Process is not novel. (*In re* McNeil, 200 O. G., 583.)

Old Article made of Material Obtained from a New Source is not novel. (*Ex parte* Cake, 188 O. G., 807.)

UTILITY.

Utility is absence of frivolity and mischievousness, and utility for some beneficial purpose. (Robinson on Patents, Vol. 1, Section 339, Note 1.)

Process Claims Which Lack Steps Necessary to Produce Useful Results should be rejected for want of utility. (*In re* Creveling, 117 O. G., 1167; *Ex parte* Fritts, 227 O. G., 737.)

Instruments of Precision which Sometimes Give Incorrect Results lack utility. (McKenzie *vs.* Cummings, 24 App. D. C., 137; Carlin *vs.* Crampton, 288 O. G., 1093.)

Incomplete Combinations should be rejected. (*Ex parte*

McClellan, 59 O. G., 1763.) A claim lacking an element essential to the operation of the device was held void for not describing an operative combination in Torrant *vs.* Duluth Lumber Co. 30 F. R., 830. Inoperativeness here might be considered either as lack of utility, or want of combination and therefore lack of invention because there is no new and useful result. In Wellman *vs.* Midland Steel Co., 106 F. R., 221, it was held that if the claim omits an element essential to make the combination operative it must be read into the claim. Here the omission seems to be regarded as a mere formal defect. Nevertheless in the practice of this office incomplete combination is a ground of rejection, appealable to the Board of Examiners-in-Chief and ultimately to the court. It should be remembered, however, that a claim for a combination is not void simply because it fails to include devices for uniting the elements, which readily suggest themselves to one skilled in the art, or which are disclosed as means for the purpose (Brammer *vs.* Schroeder, 106 F. R., 918), and it also should be remembered that subcombinations need not be operative when detached. In this case their utility resides in the fact that they contribute to the usefulness of the whole combination. (Thompson-Houston Electric Co. *vs.* Black River Traction Co., 135 F. R., 759.)

STATUTORY AND NON-STATUTORY SUBJECT-MATTER.

A Method or Means of Producing a Beneficial Result or Effect is Patentable but the Result or Effect is Not Patentable. (*In re* Gardner, 140 O. G., 258.)

The Function of a Machine or the Effect Produced by it is not patentable subject-matter. (Corning *vs.* Burden, 15 How., 252.)

An Operation that can be Performed by Only One Specific Mechanism, is not a true process. (*In re* Cunningham, 102 O. G., 824.)

Processes Which Involve Chemical or Other Elemental Action are true processes. (Risdon Iron and Locomotive Works *vs.* Medart, C. D., 1895, Page 330.)

Processes Which may be Carried Out by Mechanism are Not Necessarily Unpatentable. (Expanded Metal Co. *et al. vs.* Bradford *et al.*, 143 O. G., 836.)

Processes which may be Performed by Machinery or by Simple Manipulation, such as making bags, weaving hammocks, etc., may be patentable. (Westinghouse *vs.* Boyden Co., 83 O. G., 377.)

So Controlling a Force of Nature as to Make it do What is Wanted is a proper art. (The Telephone Cases, 43 O. G., 377.)

Article of Manufacture.

A product of nature such as the fibre of a particular variety of pines, eliminated in full lengths from the pine needles, is not patentable. (*Ex parte* Latimer, 46 O. G., 1638.)

An old substance in crystalline form may be patentable if it possesses superior efficiency, durability, etc. (Union Carbide Co. *vs.* American Carbide Co., 160 O. G., 493.)

Prior Knowledge and Use.

Prior Knowledge must be of the thing itself, not of a drawing or description thereof or an application therefor. (Jolliffe *vs.* Waldo *vs.* Vermeer and Schorik, 234 O. G., 671.)

Recollection by a Person in this Country of Knowledge Obtained in a Foreign Country is not prior knowledge in this country. (Doyle *vs.* Spaulding *et al.*, 27 O. G., 300.)

Lost Arts are patentable when rediscovered, regardless of the length of time they have been lost, provided no one can recall and reproduce them without the aid of the description of the subsequent discovery. (Mason *vs.* Hepburn, 84 O. G., 147.)

Prior Use must be so far understood and practiced as to be an established fact, accessible to the public, and contributing to the sum of human knowledge. (Diamond Patent Co. *vs.* S. E. Carr Co., 216 O. G., 327.)

Must be More Than Incidental or Casual. (Same.)

Prior Patents

must be issued before the invention in question and contain so full a description and claim of the identical invention that one skilled in the art can practice it without further invention. (Robinson on Patents, Vol. III, Section 963.)

Prior Patents Not Claiming the Invention anticipate the invention if they sufficiently disclose it (Millett and Reed *vs.* Duell, Com'r. of Patents, 96 O. G., 1241) although the ground of rejection is not prior patenting, but prior publication or prior invention, of which the patent is evidence. An applicant whose claims have been rejected on such a patent may overcome the patent under Rule 75 unless the patent was granted more than two years prior to the rejected application.

Prior Foreign Patents have been treated in another paper read before the examining corps.

Foreign Patents Lapsed by reason of failure to pay annual taxes are sufficient for rejection on the ground of prior patenting. (Sirocco Engineering Co. *vs.* B. F. Sturtevant Co., 213 O. G., 1447.)

Expired Patents should doubtless be considered as prior patents the same as lapsed patents.

Prior Patent to the Same Inventor not Claiming the Invention becomes a bar if the later application is not filed until more than two years after the grant of the patent. (*Ex parte Griffith*, 186 O. G., 557.) See below under heading "May Obtain a Patent Therefor" for further decisions on double patenting.

Sufficiency of a Patent as an Anticipation.

Claims for an article may be rejected on a patent for the process of making it, which clearly discloses the article whether the described and claimed process of making the article is inoperative or not. (*Ex parte* Griffith, 186 O. G., 557; *In re* Decker, 162 O. G., 999.) Claims may also be rejected on a mere "paper patent" if it fully describes the invention (Hyde *vs.* Minerals Separation, 210 O. G., 397), or on a patent which is defective in minor details of construction, if the principle of the invention is embodied in the patent. (Van Epps *vs.* Board and Paper Co., 143 F. R., 169.)

Fugitive Structure Existing Only at One Step in the Patented Process of Manufacturing an Article, is not a reference. (Railway Supply Co. *vs.* Hart Steel Co., 217 O. G., 699.)

Mere Mention of a Number of Possible Equivalents, some

of which probably would not serve the purpose in view, is not a sufficient disclosure. (*Ex parte* Steinmetz, 224 O. G., 363.)

Printed Publications.

A Mere Suggestion in a Foreign Publication is not enough to warrant a rejection.

Drawings Alone, in a patent which does not describe or claim the invention, are sufficient to constitute a printed publication if they clearly disclose the invention. (Keene *et al. vs.* Ideal Spreader Co., 230 O. G., 1185.)

Public Use and Sale.

Use for the Purpose of Trade and Profit mainly is not experimental although the use is incidentally for experimental purposes, and use for experiment, with incidental profit is experimental use. (Smith and Sprague Mfg. Co. *vs.* Sprague, 41 O. G., 1037.)

Submitting the Invention to a Competitive Test by Experts is not public use. (The U. S. Rifle and Cartridge Co. *vs.* The Whitney Arms Co., 11 O. G., page 373.)

Dismantling a Machine After Public Use does not avoid the statutory bar. (Am. Ballast Co. *vs.* Ballast Co., 217 O. G., 340.)

Abandonment of the Invention.

To the Public. This may be accomplished either by express declaration or by conduct (Kendall *et al. vs.* Winsor, 21 How., 322), and when it is done the act can not be recalled. (Pennock and Sellers *vs.* Dialogue, 2 Peters, 1.)

Invention Must First be Reduced to Practice. (Gary *vs.* Hale, C. D., 71, page 129.)

Failure to Claim Matter Disclosed in a Patent without reservation or a distinct patent therefor has been held to be a dedication to the public. (Mahn *vs.* Harwood, 30 O. G., 657; Ide *vs.* Trorlicht, 115 F. R., 137; Brown *vs.* Guild, 23 Wall, 181; Adams Electric Railway Co. *vs.* Railway Co., 77 F. R., 432.) This subject is treated in *Ex parte* Mullen and Mullen, 50 O. G., 837.

Abandonment that Does not Bar a Later Inventor. Such

Abandonment is not Negatived by an Alleged Intention to Resume the Invention Unless the Intention is Corroborated by Acts of the Party. (Farmer *vs.* Brush, 17 O. G., 150.)

Concealment or Failure to Make the Invention Public forfeits the benefit of the original date of the invention. (Farmer *vs.* Brush, above; Bates *vs.* Coe, 98 U. S., 31; Mason *vs.* Hepburn, 84 O. G., 147; Kendall *vs.* Winsor, 21 How., 322.)

Concealment After Reduction to Practice for a long period forfeits to others the right to a patent (Dutcher *vs.* Jackson, 225 O. G., 738), but mere delay in applying for a patent does not. (Oliver *vs.* Felbel, 100 O. G., 565.)

Long Neglect to Perfect Rights Not Excused by Notice to Manufacturers of the dilatory party's claim to be the original inventor (Gray *vs.* Hale, C. D., 71, page 129), or by

Occasional Attempts to Secure Aid (Same), or by

Alleged Poverty, if the person carries on similar enterprises demanding money and friends. (Same.)

Failure to Insert a Claim for an Invention in a Pending Application Within a Reasonable Time after Issuance of a Patent to Another for the Invention constitutes abandonment. (*In re* Fritts, 227 O. G., 742; Rountree *vs.* Sloan, 277 O. G., 744.)

Failure to Make a Generic Claim Until the Right of Another has Accrued to a narrow claim for a similar invention estops the dilatory party from making the broad claim. (*In re* Fritts, 227 O. G., 742.)

Abandonment of Application After Winning an Interference, without making the invention public, forfeits the invention to the losing party if the winning party filed no preliminary statement. (Jolliff *vs.* Waldo *vs.* Vermeer and Schorik, 234 O. G., 671.)

Neglect to Renew a Forfeited Application When Others are in the Field. See Notes on section 4897, R. S.

"MAY . . . OBTAIN A PATENT THEREFOR."

Double Patenting.

The quoted words indicate that only one patent for an invention may be granted to the inventor.

A Subsequent Patent May Not be Sustained For an Invention Claimed in a Former Patent to the same inventor. (Century Elec. Co. *vs.* Westinghouse, 207 O. G., 1289).

Or For an Invention Not Patentably Different Therefrom (Same), regardless of the dates of filing of the respective applications. (Horton Mfg. Co. *vs.* White Lily Mfg. Co., 208 O. G., 650.)

Patents to Same Inventor Based on Concurrently Pending Applications do not anticipate each other, if they do not claim the same invention. (Anderson *vs.* Collins, 122 F. R., 451; Century Elec. Co. *vs.* Westinghouse, 207 O. G., 1249.)

Patents or Applications with Claims for Inventions Not Patentably Different, Inventor Having Been Compelled to Divide.

Under these circumstances the court sustained both patents in Benjamin Elec. Co. *vs.* Dale, 158 F. R., 6171, but an application was rejected on the earlier patent in *Ex parte* Isherwood, 231 O. G., 1211.

Rejection of Claims on Application by the Same Inventor in the Issue and Claiming the Same Invention is proper practice. (*Ex parte* Gaboury, 37 O. G., 217.)

The last word in the phrase "obtain a patent therefor" clearly refers to the thing invented. An applicant is not entitled to a patent for something which he has not invented. It follows that

Undue Breadth of Claims is a proper ground of rejection under this section of the statute.

Claims generic to a Whole Class, Although Some Species are Incapable of Accomplishing the Result, should be rejected on the ground of undue breadth. (Richards *vs.* DuBon, 97 F. R., 96; Treibacher *vs.* Chemical Co., 209 O. G., 1689; Mattheson *vs.* Campbell, 79 O. G., 686; Consolidated Elec. Light Co. *vs.* McKeesport Light Co., 73 O. G., 1289; *Ex parte* Steinmetz, 224 O. G., 363.)

Attempt to Cover a Wholly Different Art After Long Delay in Prosecution of Application, is sufficient reason for rejection on the same ground. (*Ex parte* Fritts, 227 O. G., 373.)

Attempt to Include as Another Element A Mere Arrangement of the Real Elements was forbidden because of lack of disclosure. (*Ex parte* Fritts, 227 O. G., 737.)

Section 4887.

Substance of the Statute.

A foreign *patent* granted to applicant in any country is not a *bar* if filed less than 12 months before filing of his U. S. application.

A foreign *application* in a country granting reciprocal privileges gives same force and effect to a U. S. application by the same inventor filed within 12 months as if the latter had been filed at the date of the foreign application, *Unless* the U. S. application is filed more than 2 years after public use or sale in U. S., or filed after the device has been patented or described in a printed publication for 2 years.

An Applicant is not Free from his Foreign Patent as a Bar Even if the Foreign Patent Issued to his Assignees Without his Knowledge. (*Ex parte* Meloon, Decision by the Board of Examiners-in-Chief, Appeal No. 8054, April 20, 1915, Serial No. 367,099; Patent No. 1,198,743.)

Or if the Application Presents Features Unpatentably Different from the foreign Patent. (Same.)

British Patents—Complete and Provisional Specification. Bar Begins to Run From Date of Provisional Specification which Ripens into a Patent. (Bastian *vs.* Salisbury, 225 O. G., 1106.)

Bar Does Not Run From the Date of an Abandoned Provisional Specification if the invention disclosed in the complete specification is not substantially the same as that disclosed in the provisional specification and the British patent bears the date of the complete specification. (*Ex parte* Hayes, 209 O. G., 1317.)

Production of Certified Copy of the Foreign Application is required of one who makes a declaration of priority based on a foreign patent. (Art. 4 of the International Convention, 205 O. G., 1022.)

Foreign Application as a Constructive Reduction to Practice. Applicant Given Benefit of Date of Amendment of Such Foreign Application. (Bissell *vs.* Fottinger, 212 O. G., 689.)

Section 4888.

Sufficiency of Description.

In case of a process it is enough if the inventor describes his method with sufficient clearness to enable those skilled in the art to understand what the process is, and if he points out some practicable way of putting it into operation. (The Telephone Cases, 43 O. G., 377.)

Description Supplemented by General Use and Construction by Skilled Workmen, is also sufficient. (Karl Kiefer Machine Co. *vs.* Union-Werke A. G., 218 F. R., 874.)

Errors That Do Not Mislead have been held immaterial. (Mattheson *vs.* Campbell, 79 O. G., 686.)

Disclosure of Some Particular Mode or Apparatus by which the Process may be Applied is necessary in a patent for a process. (Tighlman *vs.* Proctor, 19 O. G., 859.)

Proportions of Ingredients of a Composition of Matter are required. (Wood *vs.* Underhill, 15 How., 1.)

Claims.

Failure to Particularly Point Out the Invention Sought to be Claimed is a ground of rejection. (*Ex parte* Iseman, 79 O. G., 868.)

It is to be noted that under this section of the statute the inventor must particularly point out and distinctly claim the part, improvement, or combination which he *claims* as his invention, not necessarily his invention. If he clearly claims something which is not his invention, as in the case of undue breadth of claims, the claims should be rejected under some other section, probably section 4886, as herein before pointed out.

Comprehensive Words and Phrases—"Means, Mechanism," etc.

In *Ex parte* Pacholder, 51 O. G., 295, a distinction is made between claims in which such words as "means" are coupled with a mere function or result, which are bad, and those in which such words are coupled with a mode of operation, which are proper. The same view

seems to have been taken later by the Court of Appeals of the District of Columbia. (In *re* Gardner, 140 O. G., 258.)

In Davis Sewing Machine Co. *vs.* New Departure Co. (212 O. G., 1057), it was held that such words are proper where used with reference to connecting parts or the field in which the real invention lies, but that when used with reference to the exact point of novelty they might expose the claims to attack on the ground that they are functional.

Attributing a Function to Something (a Beam of Light) Which Merely Cooperates With one of the Particular Elements of the Claim to Produce the Function is not permissible. (*Ex parte* Fritts, 227 O. G., 737.)

Structural Limitations in Process Claims are of doubtful propriety (*Ex parte* Frasch, 117 O. G., 1166; *In re* Fessenden, 226 O. G., 1081), but in Lawther *vs.* Hamilton *et al.*, 42 O. G., 487, the Supreme Court of the United States indicated that crushing seeds between rollers is a proper step of a process. This, however, is but another way of specifying the act of crushing by rolling, as distinguished from pounding or grinding.

Multiplicity of Claims Not Patentably Different warrants the rejection of one claim upon another. (*Ex parte* Whitelaw, 219 O. G., 1237.)

Mere Use of an Apparatus Covered by Another Claim is not proper subject-matter for a separate claim, even if patentable by itself. (*Ex parte* Krause, decision by the Board of Examiners-in-Chief, June 7, 1915; application No. 8439, now patent No. 1,198,039.)

Section 4897.

Renewal Applications.

Patents Granted Upon Renewal Applications Subject to Same Statutory Defenses as Original Applications. (The U. S. Rifle and Cartridge Co. *vs.* The Whitney Arms Co., 11 O. G., 373.)

"Such Invention or Discovery"—

Matter Not Disclosed in the Original Application is not permitted in the claims of the renewal. (Karl Kiefer Machine Co. *vs.* Union-werke A. G. 218 F. R., 847.)

"Abandonment Shall be Considered as a Question of Fact."

This proviso contemplates the possible abandonment of the invention notwithstanding there may have been no formal abandonment of the application. (Mason *vs.* Hepburn, 84 O. G., 147; Warner *vs.* Smith, 84 O. G., 311; Cain *vs.* Peak, 86 O. G., 797.)

Any state of facts which constitutes abandonment under Section 4886 also constitutes abandonment under Section 4887. (Barber *vs.* Wood., 207 O. G., 299.)

Neglecting to Renew and Withholding Invention After a Rival Enters the Field amounts to abandonment of the invention. (Barber *vs.* Wood, 207 O. G., 209.)

Mere Filing of Another Application by a Rival During Forfeiture of an Application is not sufficient ground for holding the invention abandoned. (Barry *vs.* Long and Long *vs.* Wittmer, etc., 225 O. G., 371.)

Section 4904.

INTERFERENCES.

Completion of Invention.

Conception.

A mere Desire for a Certain Result is not a conception of an invention. (Eshelman *vs.* Schanz, 189 O. G., 1282.)

Disclosure.

Sketches Shown Without Explanation constitute a disclosure if they can be readily understood. (Storck *vs.* Reichhelm, 227 O. G., 365.)

Reduction to Practice consists in the construction of the mechanism of a size capable of practical use, and a knowledge, perferably by actual trial, that it will work practically for the intended purpose. (Yuengst *vs.* Boyer, 63 O. G., 152.)

Test of a Device Apart From the System For Which it is Chiefly Useful is reduction to practice if the device is also designed for other systems. (Crevelin *vs.* Jepson, 226 O. G., 339.)

Construction Without Test is sufficient if the device

is simple and its efficacy obvious. (Mason *vs.* Hepburn, 84 O. G., 147.)

The Device Must be Capable of Performing its Intended Purpose. (Janin *vs.* Curtis, 231 O. G., 1539.)

Construction of a Hydroaeroplane That Will Not Rise from the Water is not reduction to practice. (Janin *vs.* Curtis, above.)

Instruments of Precision.

Unfailing Accuracy is required in the case of a voting machine. (McKenzie *vs.* Cummings, D. C. App., Vol. 24, page 137.)

Durability Tests are not necessary. (Mason *vs.* Hepburn, 84 O. G., 147.)

Drawings and Models do not constitute reduction to practice. (Mason *vs.* Hepburn.)

Constructive Reduction to Practice is secured by the filing of an allowable application. (Porter *vs.* Louden, 73 O. G., 1551.)

First to Reduce to Pracitce is Entitled to Priority. (Reed *vs.* Cutter, 1 Story, 590.)

Except When the First to Conceive is Diligent in Reducing to Practice. (Lorraine *vs.* Thurmond, 51 O. G., 1781; Eck *vs.* Kutz, 132 F. R., 758.)

Degree of Diligence Required. An inventor is not required to devote his entire time to the preparation and filing of his application, or to abandon his ordinary means of livelihood, and he is not accountable for the usual delays of a busy patent attorney. (Courson *vs.* O'Connor, 224 O. G., 1057.)

Time taken to Investigate Commercial Advantages does not excuse delay after a rival enters the field. (Conrad *vs.* Krause and Marley, 233 O. G., 1107.)

Reduction to Practice Same Day as Opponent's Constructive Reduction entitles the first to conceive to priority. (Janin *vs.* Curits, 231 O. G., 1359.)

When Both Parties File Applications on the Same Day Without Previous Reduction to Practice the first to conceive is entitled to priority. (McFarland *vs.* Beall, 231 O. G., 605.)

Conception Shown by an Amendment, Followed by Diligence entitles the party to the date of the amendment. (Young *vs.* Struble, 157 O. G., 488.)

Minority of an Inventor Not an Excuse for Delay. (Fuller *vs.* Jones, 115 O. G., 1066.)

Reasonable Delay After Reduction to Practice does not destroy the inventor's rights in the absence of concealment, suppression, or abandonment of the invention. (Oliver *vs.* Felbel, 100 O. G., 2384; Rolfe *vs.* Hoffman, 121 O. G., 1350.)

Res Adjudicata—Estoppel.

Broadened Claims Presented by Defeated Party in same or Another Application After Decision on Priority should be rejected unless a second interference is necessary to determine some question that could not have been determined in the first interference. (Blackford *vs.* Rusby, 204 O. G., 321.)

Second Interference Between Same Parties, Issues Differing Only in Scope should not be declared. (Corry and Baker *vs.* Trout *vs.* McDermott, C. D., 1904, page 144.)

Failure to Appeal From a Decision Dissolving an Interference on the ground that a party has no right to make the claims, is sufficient reason for rejection on the ground of *res adjudicata* if they are not canceled. (U. S. *ex rel.* Motor Co. *vs.* Moore, 133 O. G., 1680; *Ex parte* Kidder, 229 O. G., 269.)

Substitution of Broader Claims After Adverse Decision on Appeal from Decision Dissolving an Interference bars the claims that were canceled. (*Ex parte* Capen, 214 O. G., 683.)

Failure to Make a Claim Suggested by the Board of Examiners-in-Chief until After Final Judgment of Priority precludes making the claims. (Sutton, Steel and Steel *vs.* Wentworth, 204 O. G., 320.)

Presentation of Same Claims in Older Application After Dissolution of Interference for Failure to File an Affidavit Overcoming a British Patent is not barred on the ground of *res adjudicata.* (Rotter *vs.* Hodgkinson, 213 O. G., 119.)

Claims Which Might Have Been Made by the Defeated Party in an Older Application should be rejected if presented after judgment in an interference which was

declared on a narrower issue. (Rusby *vs.* Cross, 204 O. G., 319; *In re* Marconi, 38 App. D. C., 286.)

Failure to Appeal from a Decision in an Interference Holding that the Device of the Present Application was Inoperative made the question of operativeness *res adjudicata*, where the application in interference was a later application by the same party and the applicant had attempted to introduce the present application on a motion to shift the burden of proof. (*Ex parte* Kidder, 229 O. G., 269.)

Two-Party Interference with Prevailing Party by a Defeated Party to a Three-Party Interference is not permissible after the conclusion of the first interference because the question of priority is *res adjudicata*, where the issue of the later interference is readable upon the particular applications of the said two parties which were involved in the first interference. (Robinson *vs.* Copeland, 187 O. G., 514.)

Winning Party May Broaden his Claim After Interference if not inconsistent with the testimony or judgment. (Little, Jr., *vs.* Armstrong, 232 O. G., 935.)

Second Interference on Broadened Issue Permissible Where it Appears that the Conclusion in the First Interference would have been Different on a Broad Issue. (Same.)

Broad Claims which Remain in the Application of the Defeated Party Throughout an Interference should not afterwards be rejected where the interference is based on a narrow claim. (*Ex parte* Cutler, 232 O. G., 939.)

Parties Whose Rights Have Been Transferred to the Same Assignee are bound by judgments against any one of the parties apparently to the same extent as if they were a single party with several applications. (McKenzie *vs.* Garrett, 212 O. G., 1357.)

Priority on Counts Not Patentably Different Awarded to Different Parties.

In such a case the Examiner should refuse a patent to the party to whom the narrower counts were awarded. (Llewllyn *vs.* Upson, 227 O. G., 367.)

Section 4916.

REISSUES.

Inoperative or Invalid.

A Patent Need not be Wholly Inoperative or Invalid in order to justify a reissue. (Hobbs *vs.* Beach, 94 O. G., 2357.)

Diligence in Applying for a Reissue, Intention, and Intervening Rights are considered in this paper under the subject of "Broadened Claims," which in turn is considered under the head "Same Invention," because they are commonly so associated, but logically they should be treated under the heading "Inoperative or Invalid." If broadened claims are for the same invention a month after a patent is granted they are for the same invention fifteen years later, regardless of delay or intervening rights. The right to broadened claims is based on the inoperativeness of the patent to secure the inventors' rights, and when these rights are forfeited by reason of his conduct the original patent is no longer inoperative to secure all that belongs to him.

Defective or Insufficient Specification.

Changes Made in the Reissue Not Warranted Unless They Correspond to the Defects Alleged in the Application for Reissue. (Grand Rapids Show Case Co. *vs.* Baker, 208 O. G., 1355.)

Inadvertence, Accident or Mistake.

Intentional or Deliberate Omissions to claim matter in the original patent can not be corrected by reissue. (Grand Rapids Show Case Co. *vs.* Baker, 208 O. G., 1355.)

Second Reissue Including Claims of Original Patent which were Omitted from the First Reissue through Mistake as to the Prior Art, is valid in the absence of delay. (Autopiano Co. *vs.* Am. Player-Action Co., 217 O. G., 1055.)

Failure of the Examiner to Suggest Claims for Interference is not such a mistake as is anticipated by the statute. (Jackson and Connett *vs.* Ladoux, 219 O. G., 929.)

Same Invention.

Broadened Claims do not necessarily cover a different invention. (Topliff *vs.* Topliff *et al.*, 59 O. G., 1257.)

Must Not Suppress Subsequent Improvements which do not conflict with the invention described in the original patent. (Gill *vs.* Wells, 6 O. G., 881.)

Omitting One Element of Original Claim and Adding Another may amount to claiming a different invention. (Gage *vs.* Kellogg, 26 F. R., 242; Miller *vs.* Brass Co., 104 U. S., 350.)

Diligence Required in Making Application for Reissue if Claims are Broadened. (Millery *vs.* Brass Co., above; Hubel *vs.* Dick, 28 F. R., 137.)

Same—Right to a Broadened Claim also Affected by Evidence in the Original Patent and Elsewhere of the Patentee's Intention as to the Scope of his Claims. (Ide *vs.* Trorlicht, 115 F. R., 137.)

Delay Caused by Misstatement of Facts by Another is justified if diligence after the truth is discovered is shown. (*Ex parte* Hielt, 126 O. G., 1067.)

Belief by a Foreigner that the Law in Our Country is the Same as in His may also be taken into consideration as an excuse for delay. (*In re Herault.*, 127 O. G., 3217.)

Right to Make Narrower Claims May be Lost

Through Delay and Intervening Rights where a broad invalid claim has been permitted to remain unchanged for years. (Carpenter Straw-Sewing Machine Co. *vs.* Earles, 52 F. R., 809; Hubel *vs.* Dick, 28 F. R., 132.)

Sub-Combinations not Claimed in the Original Patent may be claimed in a reissue subject to the same statutory and other restrictions as broadened claims. (Universal Caster & Foundry Co. *vs.* Schenck, 165 F. R., 344.)

Reinstating Claims of Original Patent in Second Reissue, After Omission from First Reissue, is permissible, subject to the usual restrictions as to delay, etc., but

Persons who have Acquired Intervening Rights by the manufacture and sale of devices that did not infringe the first reissue will not be held as infringers under the second reissue. (Autopiano Co. *vs.* Am. Player-Action Co., 217 O. G., 1055.)

Acquiescence in Rulings by the Examiner together with delay in applying for a reissue, estops the owner of a reissue patent from proceeding against one who has acquired intervening rights. (Franklin & Co. *vs.* Illinois Moulding Co., 128 F. R., 48.)

Practice When There is Evidence of Intervening Rights Before the Examiner. See Skinner *vs.* Carpenter, 166 O. G., 1281; Norling *vs.* Hayes, 166 O. G., 1282; and the patent files of Carpenter, Reissue No. 13361, and Hayes, Reissue No. 13410.

Patent for Apparatus Reissued With Claim for Process held unwarranted where the apparatus and process were clearly distinct inventions. (Heald *vs.* Rice, 21 O. G., 1443; James *vs.* Campbell, 21 O. G., 337.)

Patent for Process Reissued With Claims for Product has been held proper, particularly where the process produces a new substance as its product. (Merrill *vs.* Yeomans, 94 U. S., 568; James *vs.* Campbell, 21 O. G., 337.)

Section 4920.

Prior Patent or Publication.

Defendant Pleading Same as an Anticipating Patent or Publication Limited to its Date. (Bates *vs.* Coe, 98 U. S., page 31; Eck *vs.* Kutz, 132 F. R., 758.)

But not so Limited if Averment is Made of Earlier Invention and Use, or if Date of Application is Averred. (Barnes Automatic Sprinkler Co. *vs.* Walworth Mfg. Co., 60 F. R., 605; Diamond Drill and Machine Co. *vs.* Kelly Bros., 120 F. R., 282.)

Inoperative Patent for a Process which Clearly Discloses a Product is a valid reference as against a subsequent inventor of the product. (*In re* Decker, 162 O. G., 999.)

"NOT THE ORIGINAL AND FIRST INVENTOR."

Patent Not Claiming the Invention in Controversy, Granted After Applicant Filed his Application, but on an Application Filed First is evidence of the state of the art at the time the patentee applied for his patent, which determines whether the invention claimed by the later applicant is actually an invention or not. (Millett and Reed *vs.* Duell, Com'r., 96 O. G., 1241.)

Antedating Invention Must be Complete, Not Experimental; that is, made so as to be of practical utility. (Agawam *vs.* Jordan, 7 Wall., 583; Howe *vs.* Underwood, 1 Fish., 160.)

Trial of an Incomplete Structure, to ascertain what changes may be necessary, is experimental. (N. W. Fire Extinguisher Co. *vs.* Philadelphia Fire Extinguisher Co., 18 Fed. Cases, 394.)

Trial of a Complete Structure, to illustrate or test its practical efficiency, is not experimental, if the machine proves its capacity to effect what its inventor proposed. (Same.)

Application of Prevailing Party in an Interference Evidence of Priority, as Against the Losing Party and his Assignees. (Westinghouse *vs.* Chartiers Valley Gas Co., 43 F. R., 582.)

Patent Granted to a Plurality of Persons as Joint Inventors Void if the Invention was Made by a Sole Inventor. (Stewart *et al. vs.* Tenk, 41 O. G., 1502.)

Patent Granted to a Single Person as Sole Inventor is of Doubtful Validity if the Invention was Made by Joint Inventors. (Royer *vs.* Schultz Belting Co., 50 O. G., 557.)

Section 4923.

PRIOR KNOWLEDGE AND USE IN A FOREIGN COUNTRY.

Earlier U. S. Patent to a Foreigner Based on an Earlier Application Barred by U. S. Application made by an American, Before Foreigner's Patent was Granted. (Vacuum Engineering Co. *vs.* Dunn, 209 F. R., 219.)

It is impossible to reconcile this decision with Bissell

vs. Fottinger, 212 O. G., 689, where Fottinger filed an application in the German Patent Office, and after amending it was given the benefit of the date of his amendment as a constructive reduction to practice. Judging from the published decision, however, without having seen the record, it seems that in Vacuum Eng. Co. *vs.* Dunn, the defendant relied upon the provisions of Section 4923, while Bissell *vs.* Fottinger was considered in the light of Section 4887.

March 15, 1917.

Chemical Inventions and Discoveries

A paper read November 21, 1916, before the Examining Corps of the United States Patent Office

by

GEORGE S. [illegible],
Principal Examiner, Division [illegible],
U. S. Patent Office

[illegible]
1916

Chemical Inventions and Discoveries

By

GEORGE S. ELY,

Principal Examiner, Division Thirty-one,
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Perhaps it would be well to preface my remarks with the statement that some things I shall say are not, as far as I am aware, supported by any court decisions, and such things must be taken, therefore, as conclusions reached as the result of a long experience in dealing with the particular questions considered, rather than as dicta sanctioned by the authority of some judge.

The provision of the Constitution under which Congress was granted authority to enact the Patent Law, gave it the power to pass laws which should secure, for limited times, to authors and inventors, the exclusive rights to their writings and *discoveries*.

It is generally the practice to speak of the Patent Laws as designed to protect *inventions*, but the language of the Constitution refers to *discoveries*. Are the two terms synonymous? Or is there a distinction between them? As a matter of fact patents have been granted and rightly so, for both *inventions* and *discoveries*, and most writers have made no particular distinction between the terms. However, the two terms, "invention" and "discovery" have quite distinct meanings and should be distinguished.

Without attempting to define what constitutes an invention, it will be of interest to differentiate the two words, and I have found no writer who has so satisfactorily discussed the difference between the two words as Merwin in his "Patentability of Inventions."

> "Most patents," he writes, "are granted for inventions strictly. The patentee has invented or created a device, contrivance or mechanism, which operates according to known laws,

> or depends upon familiar properties of matter. He has found out nothing new in nature but he has created a new way of using or combining familiar materials, or has caused a force in common use to operate in a new situation or for a new purpose."

The discoverer, however, as opposed to this, has found out some new law of nature or some hitherto unknown property of matter which he applies to some useful purpose. If there be a discovery, there need be no inquiry as to how it was made or how much ingenuity was needed to embody the discovery in mechanism productive of a new and useful result.

The hot blast case, so familiar to every one, is in point. Upon the discovery that a hotter fire would be produced in a furnace if the blast of air to support combustion were preheated, no ingenuity whatsoever was requisite to devise some mechanism to make the discovery available for practical purposes. Or, to cite a later case, the courts held a celluloid top for a salt shaker involved something more than a non-patentable substitution of material, and the patent was sustained because of the *discovery* of the fact that a film of moisture does not attach itself to celluloid as it does to metal or glass, with the useful purpose that this hitherto unknown characteristic of celluloid prevented the caking of salt on the top so annoying in damp weather in the case of glass or metal tops. (Hogan *vs.* Westmorland Specialty Co., 163 Fed. Rep., 289.) It is of interest to note that this alleged property of celluloid on the strength of which the higher court sustained the patent, appears to have been the discovery of the plaintiff's attorney, long after the patent was granted. There is not the slightest hint of any such property of celluloid in the specification of the patent; as far as the record shows this peculiar property of celluloid was wholly unknown to the patentee. I shall have occasion to refer to this later.

The court said in Colgate *vs.* Gold Stock Telegraph Co., 4 Banning and Arden:

> "The gist of the invention is the *discovery* of the fact that gutta-percha is a non-conductor of electricity."

Mr. Justice Grier in Corning *vs.* Burden, 15 Howard, 252, said:

> "A new process is usually the result of a discovery, a machine of invention."

Again quoting from Merwin, in contrasting inventions and discoveries, he says:

> "The courts never contrast 'discovery' as they do 'invention' with the 'skill of the workman.' "

The determination of the patentability of an invention is often a troublesome matter and is one regarding which different minds do not agree. In Pearl *vs.* The Ocean Mills, Judge Shepley said:

> "No more difficult task is imposed upon the court in patents cases than that of determining what constitutes invention and of drawing the line of distinction between the work of the inventor and the constructor."

While, as stated, no attempt is made to define an invention, the distinction between the words "invention" and "discovery" is important because quite a considerable portion of the work in the chemical divisions of this Office relates to discoveries rather than to inventions. As before mentioned, if a patent be asked for a discovery, this Office need not concern itself with an inquiry as to the mental process by which the discovery was made. A discovery may be purely accidental, as when a certain manufacturer of nitroglycerine accidentally spilled some of it upon sand by which it was absorbed, which, to his surprise, exploded, upon the application of a flame, instead of burning, as he expected.

It is related that in the winter of 1861-62 a certain distiller of oil built a fire under his still and went off to dinner expecting to return in about half an hour. While at dinner he was taken with a fit, so that it was some four or five hours before he returned. To his great surprise, he found on his return, that the gravity of the distillate then coming from the condenser, was lower than it was before he left for dinner. This was the discovery of the

cracking process in the distillation of mineral oil, in accordance with which heavy oils can be broken up into lighter ones.

Again, a patentable discovery may be the result of a long, patient series of experiments, as when the charred fibre of the bamboo was found to constitute an excellent carbon filament for an incandescent electric light.

It seems that this discussion as to the difference between an *invention* and a *discovery* is not merely an academic one but on the contrary is of considerable importance in the decision as to whether or not a claim should be allowed.

If the Examiner is satisfied that a real discovery has been made and the means or method of making the discovery of service in the arts have been devised, the claim should be allowed, however obvious such means or method may have been, once the discovery has been made. There need be, as stated, no inquiry as to how the discovery was made, and it may be doubtful whether an apparent unimportance of the discovery would justify a rejection. It is impossible to foresee what may result from an apparently trivial discovery.

In those divisions of the Office which treat applications for patents concerned with chemical industries, a considerable proportion are purely mechanical in character: in such applications nothing is involved which is either distinctly chemical or physically chemical in character. Those applications which are purely mechanical in character, it is not the object of this paper to treat. The same questions come up for adjudication in them that occur in the mechanical inventions treated by other examining divisions. The purpose of this paper is to set forth, in a more or less desultory manner, some of the problems which are peculiar to applications for patents for chemical inventions or discoveries.

In the first place, it may be noted that a broad distinction exists between chemical discoveries and inventions which are wholly mechanical. The distinction, which is far-reaching in its effects, is this: No prophesy is possible in chemical discoveries such as is frequently possible in purely mechanical inventions. From an inspection of the drawings and a perusal of the speci-

fication in the majority of applications for purely mechanical inventions, it is often safe to say that the invention is operative. On the contrary, it is never possible to foretell with certainty, that any untried chemical process is operative. For example, it might be presumed that because caustic potash will give a certain result, it would be safe to infer that caustic soda would have the same effect, and would therefore be an exact equivalent. But such an inference would not be safe; an actual trial or demonstration would be necessary to prove the inference. In many cases the two would be equivalent but not in all. Both, for instance, will saponify fat but the one yields a soft soap and the other a hard soap.

One element or agent is never universally the equivalent of another. Whether two elements or agents are equivalents depends on the particular problem. This is true, though it is not always recognized in mechanics. A spring is often the equivalent of a weight but there are cases where they act so differently that the substitution of one for the other involves patentability.

The courts have repeatedly recognized the futility of an attempt to prophesy or foretell in chemical procedure. Thus in Stevens *vs.* Keating, 2 Webster, 181, the judge said:

> "I may say that I do not quite go along with the doctrine of equivalents in chemistry, applied in the same way as in mechanics. . . . Although you can predict with confidence in mechanics, in some instances . . . in chemistry you almost entirely fail. You can not, because sulphuric acid will succeed, tell at all that nitric acid will succeed or that any other acid will succeed, until you have tried. . . . You can not anticipate the result."

In Tyler *vs.* Boston, 7 Wallace, 327, the court said:

> "Now a machine, which consists of a combination of devices, is the subject of invention and its results may be calculated, *a priori*, while a discovery of a new substance by means of chemical combinations of known materials is empirical."

In Hicks *vs.* Kelsey, 18 Wallace, 670, the court said:

> "And in some compositions of matter, a different ingredient changes the identity of the compound, whereas an iron bar in place of a wooden one and subserving the same purpose does not change the identity of the machine."

To the same effect was the decision in The National Filtering Co. *vs.* Arctic Oil Co., 8 Blatchford, 416, in which a patent for filtering Coal Oil or Petroleum through bone black was sustained, notwithstanding the fact that the same filtering agent had been employed in filtering other liquids, even vegetable oils.

The gist of the matter appears to be, as suggested in Tyler *vs.* Boston (supra), that many of the meritorious inventions in chemical lines are based upon discoveries. Patents granted thereon are founded on schemes that render the new discovery available for useful purposes, rather than upon an ingenious (or "surprising") combination of mechanisms productive of some new mechanical result or of some old mechanical result in a new or improved manner.

If this is the fact, and if, as stated, it is impossible to foretell what will happen in a chemical procedure until it has been tried, why then, it may be asked, should not every applicant in chemistry be granted a patent unless the claims be exactly met? And does the doctrine of equivalents obtain at all in determining patentability in applications in chemical lines?

The best answer to these queries, and perhaps the only one, is based upon the doctrine of *reasonable expectation.* This doctrine is very well stated by Commissioner Duell in Bender *vs.* Hoffman, 85 O. G., 1737. The alleged invention involved in that case was for an alkylated dye stuff, and the decision, in substance was that the effect of alkylation on other dyes being so well known, there was good reason to anticipate what would be the result in any particular case. The decision of the German Patent Office was quoted with approval as follows:

> "It has not been proved or pretended that through this process another technical result

> would be obtained beside the known effect of the greater resistance to alkalies. . . . After so many precedents such a process of alkylation is no longer patentable, if by the same, a new technical result is not obtained."

It will be useful to consider, by way of example, some of the various factors which enter into the consideration of chemical procedures, or which may modify in one way or another the effects produced.

First, there are the materials, chemicals or ingredients involved, and under this—

(a) The quantities or proportions;
(b) The purity of the materials;
(c) The condition of the materials, as solid, liquid or gaseous, or if metals, as being in the colloidal state, etc., etc.
(d) The strength of solutions, if the agents are in solution;
(e) The solvents employed.

Second, the conditions such as—

(a) Temperature;
(b) Pressure;
(c) The nascent state;
(d) Electrical conditions or other conditions which may effect molecular or atomic vibrations such as light, X-rays, etc.
(e) The effect of catalyzers.

Third, The time factor.

No pretense is made that this list comprises all the factors or variables which may influence the results obtained in chemical procedures. Nor is there any possibility of discussing at any length these factors within the proper limits of this paper. But it may not be wholly without interest to consider a few examples of cases in which some of the factors or variables noted play an important part.

Chemical reactions are either reversible or irreversible. A reaction is said to be reversible when a change of

conditions changes its direction. Quantities and temperatures are important in determining the direction of a reaction. As an instance of the effect of quantity or mass in a reaction, hydrogen sulfid will precipitate cadmium sulfid from solutions of cadmium chlorid, but cadmium sulfid dissolves in an excess of hydrochloric acid. As to temperature as a determining factor, if sal ammoniac be heated to 350°C it decomposes into ammonia and hydrochloric acid gas, but if the temperature be lowered, ammonium chlorid is reformed.

Prior to the invention of Adams in 1869, all attempts to electro-deposit nickel on other metals, as iron, had failed, because the solutions employed had not been sufficiently pure. Adams succeeded where others had failed and his patents were sustained. The United Nickel Co *vs.* Harris et al., 17 O. G., 325.

Practically, the exact contrary to this is found in the generation of hydrogen resulting from the action of sulfuric acid on zinc. In this impurities play an important role. If the zinc be quite pure, it is scarcely attacked by the acid, due to a film of hydrogen forming on the zinc, protecting it from the acid. The zinc should contain certain impurities which are more electro-negative than zinc. Again the acid should be quite dilute.

The time factor is often very important. In the synthetical production of ammonia, as carried out in the works of the Badische Anilin-und Soda Fabrik Gesellschaft, it is important that the ammonia as produced be at once removed from the field of reaction. As opposed to this, in the old bark method of tanning, it was essential that the skins remain in the tanning bath a good part of a year.

Another illustration of variation of the factors will be instructive. Synthetical varnish resins or gums had been made by condensing phenols by the aid of aldehydes, certain temperatures and pressures being requisite. It had been demonstrated, however, that the process of condensation must not be carried too far, as otherwise compounds were formed that were insoluble in varnish solvents and so were unsuitable for the manufacture of varnishes. It occurred to Dr. Baekeland to experiment along this line, to see what he would obtain if he carried

the condensation further than others had done. As a result he produced a new substance which he called "Baekilite," a substance with which many of you are doubtless more or less familiar.

The conclusions to be drawn from these illustrations are obvious. If a variation of any of these factors results in a new and unexpected technical product, different in kind, patentable novelty must evidently be conceded. But on the contrary, if the variation gives only the same kind of result and the effect is what might reasonably be expected, then, generally speaking, no patentable invention has been made, as e. g., if the temperature be raised with nothing more than the expected result, that the reaction is correspondingly hastened.

Or, to put the proposition in somewhat different language; the variation to be patentable should be something *critical*. To illustrate what is meant by critical, it might be well to refer to certain mathematical curves, whose curvature gradually changes with a change in the value of the variables, until certain values are assigned to the variables, but when those values are assigned, the curvature suddenly and sharply changes, at a point called in mathematics, a cusp.

In the curve representing the solubility of sodium sulphate, there is such a cusp at 33°C. Below that temperature solubility increases with a rise of temperature, but at that temperature there is a sharp change and solubility decreases with a rise in temperature. The temperature of 33°C is therefore critical in the process of dissolving sodium sulphate in water.

One other illustration of the term *critical* will be given. Crude mineral oil consists of a mixture of a large number of different hydrocarbons having different specific gravities and different degrees of volatility. If such oil be carefully distilled it is possible to obtain different fractions which are only educts, that is to say, such fractions that the sum of them contains only what was in the original crude and in the same proportions. Such a process of distillation would be like an orange sorter in which oranges of various sizes are run over an inclined plate provided with circular holes of different diameters. But when a certain temperature is employed in dis-

tilling crude oil, there occurs a breaking up of some of the molecules of the heavier ingredients resulting in an increased yield of the more volatile distillates. The distillation of oil under such temperatures, a process of destructive distillation, is generally known as cracking. Owing to the increased demand for gasoline, there is great activity in inventions in this line. Evidently, a temperature which will crack oil is critical.

Chemistry is concerned with intra-molecular changes and chemical industries have to do with processes and apparatus by which man is enabled to control chemical affinities in such a manner as to produce new products resulting from intra-molecular changes.

The sciences of mechanics and physics are concerned only with changes outside of the molecules, while chemical industries relate to changes inside the molecule. In the former the essential characteristics of the material operated upon remains unchanged, but in the latter they are altered. This is, of course, elementary but is referred to here for the purpose of emphasizing the difference in the questions necessarily presented for adjudication in considering applications along chemical lines from those arising in purely mechanical inventions.

From the very nature of the problem presented to one who has made an invention or discovery in a chemical line, and from the fact previously stated, that prediction or prophesy is impossible in chemistry, and that slight changes in conditions may profoundly and critically alter the result (as has been illustrated) some important conclusions may be drawn.

One important conclusion is this: That the utmost exactness of detail should be given in describing the invention or discovery for which a patent is sought. Objection to this proposition has been made on the ground that if the procedure be too exactly described, the patent will be so limited as to be worthless. But a sufficient answer to this objection is that the applicant is not required to limit his claims beyond operative limits unless the state of the art is compelling. The exact procedure by which the best result has been obtained should be detailed and then the applicant should state how widely he has found that he can depart from the exact details recited.

One of the points in securing this necessary detail in description and on which sufficient emphasis is not always laid, is an insistance on accuracy of nomenclature.

In a recent case, an applicant stated that he employed amido-compounds, but each and every one of the chemicals specified was an amino-compound. On a requirement being made to change amido to amino, the applicant cited certain authorities to support his contention that the substances he employed were called by that name by some authorities. Thereupon the examiner replied that he was well aware that certain writers had used the terms indiscriminately, but that was no reason for not insisting that applicant use words with discrimination. In order that it may be known just what a patent does or does not cover, exactness in the use of language should be insisted upon.

The proposition has been made that a patent can not be generic unless it is more or less indefinite, and the apt reply to that is old. The boundaries of a thousand-acre farm may be just as well defined as of a one-acre farm.

In Merrill *vs.* Yeomans, 4 Otto, 568, the court said:

> "The public should not be deprived of rights supposed to belong to it without being clearly told what it is that limits these rights."

A not infrequent mistake in describing chemical processes consists in basing a generalization upon a certain characteristic which is wholly impertinent to the problem. As is familiar to every one all objects or materials have many characteristics, and any particular characteristic may be made the basis of a classification. The lexicographer selects the name of a substance as his basis of classification and puts together all objects the initial letter of whose name begins with any letter of the alphabet. But the lexicographer's scheme of classification evidently would be an absurd one to use in drawing claims. It would of course, be ludicrous for one who found that copper would do in a certain process to claim substances whose names began with the letter C.

More specifically, consider ordinary white granulated

sugar. It is white, it is granular, it is sweet to the taste, a solution of it has a certain effect on the polariscope, and chemically speaking it is a carbohydrate, i. e., a compound of carbon, hydrogen and oxygen in which there are twice as many hydrogen atoms in a molecule as there are oxygen atoms; thus it could be considered as a compound of carbon and water. Sugar has other characteristics, but those mentioned suffice to illustrate the point it is desired to make. Suppose in some particular process, the applicant were to use sugar, and in an effort to secure a broad generic claim, he covered carbohydrates. Then it should be made to appear from the inventor's researches or otherwise (as from the nature of the case) that sugar was effective because it is a carbohydrate and that carbohydrates generally would do. Suppose one were sweetening his coffee: Sugar will do it; many other carbohydrates, as starch, will not. Saccharin, which is not a carbohydrate but a coal tar product will do the work of sugar in sweetening coffee. However, saccharin could not be used as a substitute for sugar in the work of increasing the yield of alcohol when added to a liquor to be fermented.

It is evident then, that the question of equivalency must depend upon the particular problem. For drying air, strong sulfuric acid, anhydrous glycerin, strong alcohol, calcium chloride or carbide and hygroscopic salts generally might be equivalents. These substances, however, would probably not be equivalents for any other purpose.

It is clear, therefore, that one is able to generalize in phrasing claims for a chemical invention or discovery when, and only when, he thoroughly understands the principles involved and as a result of his own or other's experiments has ascertained what are equivalents, and as to equivalents, what are the common characteristics of two or more substances which make them equivalents for the particular purpose in hand.

In this connection, see Matheson *vs.* Campbell, 79 O. G., 686. It is interesting to note that the judge in that case spoke of the invention as a discovery. See, also, the cases, In re Dosselman and Neymann, 167 O. G., 983, and In re Ellis, 167 O. G., 981.

The courts have repeatedly stated (as in Cahill *vs.* Beckford, 1 Holmes, 48) that it is not essential to the validity of a patent that the inventor should have been sufficiently learned to have thoroughly understood or accurately stated the philosophy of a process which he has invented or discovered and reduced to practice.

This is true without doubt: it follows, however, from what has been said, that unless the inventor or discoverer does thoroughly understand the philosophy of a process of which he is the inventor or discoverer, he is wholly unqualified to know what are equivalents or how to draw broad claims.

The writer calls to mind a certain attorney of excellent standing before this Office who, it was related, stated that he did not pretend to undertake to understand fully the whys and wherefores of many of the inventions for which he solicited patents. He left that to the inventors, he said. It is submitted that that attorney or any other would be in position to serve his clients much better, because of the ability intelligently to draw broad claims, if he fully understood all of the principles involved in the applications he prosecuted before this Office.

If the attorney who prosecuted the application for a patent for a celluloid top for a salt shaker had understood the invention as the attorney who defended the patent in the higher court did, he would have drawn a claim for a top for a salt shaker made of material repellant to moisture.

The courts may, and sometimes do, give a patentee the benefit of unmentioned equivalents. Thus, in Chadeloid Co. *vs.* De Ronde, a patent was held to be infringed although the infringer replaced alcohol by acetone, even in the face of the fact that there was no hint of the equivalency of alcohol and acetone in the patent. It is believed, too, that no one could have foretold that they were equivalents in the particular case until tests had been made. So, too, in Triebacher Chemische Werke Gesellschaft *vs.* The Roessler and Hasslacher Chemical Co., 209 O. G., 1689, for a pyrophoric alloy of cerium and iron, the court gave the patentee the benefit not only of an unnamed equivalent but of an

equivalent which the language of the claim would exclude.

But to rely upon the beneficence of the court is not very safe, in face of other decisions to the effect that a patentee is entitled to no more than he has described.

Speaking of the liberality of the courts, the writer may perhaps venture his individual opinion that in some cases, the courts have been extremely liberal in construing patents going further than equity demands, when it is remembered, as has been stated, that in chemical procedures, it is absolutely impossible to predict with certainty, or to say that any proposed operation will turn out as expected until trial has been made. It would not be surprising if a reaction along this line would occur sometime.

The patent system was inaugurated to promote the growth of the useful arts, and with all deference to the learned judges of our courts, it seems to the writer that, while the utmost care should be taken to make the measure of protection commensurate with the amount of advance in the art contributed by an inventor or discoverer, protection should not go beyond that point. To afford protection to an inventor or discoverer for something beyond or outside of his disclosure is to give him too much, more than his discovery deserves. To do so places a serious handicap upon subsequent meritorious inventors or discoverers.

This criticism would seem applicable to the decision of the court to which reference has already been made, viz., the celluloid salt shaker top case, in which a patent was sustained on account of a certain property of a certain substance, which property was not mentioned in the patent, and was apparently unknown to any one when the patent was before the lower court (where it was declared invalid) and was only discovered by plaintiff's counsel when the case was before the higher court. It might be said that the property necessarily resided in the particular substance whether it was known or not. The patentee did not in that case add anything to the sum of human knowledge. He made no advance in the art. Counsel for the plaintiff made the discovery in that case and the reward, should, if it belonged to any one, have

accrued to him. The true rule is stated in the decision in re Sexton, C. D., 1873, page 66:

> "While a generous liberality should be shown to inventors, so as to afford ample protection for everything rightfully their own, an unwarrantable expansion of patents is a gross violation of lawful privilege, and the infliction of a great wrong upon other inventors and the public generally."

There are numerous decisions to the effect that a discovery or bare principle is not patentable. What is patentable is the apparatus or process by which the discovery is made to subserve some useful purpose.

It follows from this that claims based upon a chemical invention or discovery should be drawn in mechanical terms, i. e., in terms of the mechanical steps actually taken to embody the invention or to execute the process. An inventor has no right to claim operations of nature. His claims should cover the steps or means by which he puts into operation, and governs the operation of the natural forces of which he is availing himself to produce the result aimed at. This is not, however, to be construed too strictly. An applicant might, of course, for example, cover, in his claims, the step of heating and need not, unless the state of the art or the nature of the particular work requires it, state whether he heats over a naked fire, by a jacket or steam coil, by injected steam or hot gas, or by an electrical resistance.

Sometimes an applicant argues against a reference because of a different theory of operation. But it is axiomatic that if two parties act upon the same substance by the same series of steps arranged in the same order they are bound to obtain the same result, however much their theories may differ as to the results obtained or the reactions involved. This consideration affords an additional reason for requiring an applicant to cover in his claims the steps that he takes; it is, however, often not only admissible but desirable to limit what he does by a statement of the result produced by the steps he takes as, for example, adding an acid until the solution is neutral to litmus paper, or heating iron until it becomes incandescent.

In this same line should be considered the cases of prior accidental production of a given result. Reference has been made to some of the variables or factors with which chemical procedures are concerned. The factors or variables are numerous and frequently a considerable number of them are independently variable. Let it be supposed that in the execution of a given process there are several independent variables and that a certain peculiar result was occasionally obtained when a wholly fortuitous group of values were given by chance to these several variables. But the one executing the process did not know just what particular set of valves he ought to assign to his variables to produce this peculiar result whenever he wanted it. He only got it haphazard and by chance. The subsequent discoverer who ascertained the particular set of values he should assign to the variables in order to produce the peculiar result without failure and everytime he tried, would not be anticipated by such prior accidental production. See, Tilghman *vs* Proctor, 12 Otto, 707.

Speaking of the form which should be given to the claims drawn for a chemical discovery, it may be remarked that a common mistake made in drawing claims in such a case, is to make them fail to tell the story because of indefiniteness. A common form of indefiniteness is involved in the use of such words as "predetermined" or "desired." Neither the Office, nor the court which may be called upon to pass on the patent, possesses any means of searching the mind of the inventor to ascertain what is meant by such words. Sometimes an answer is made that the specification affords sufficient explanation; but the answer is not a good one. The statute requires that the claims point out what is conceived to be novel. In one case recently an applicant claimed substances "corresponding in properties to calcium hydroxide." This, when analyzed will be found to be wholly indefinite. In what properties did the substance correspond to calcium hydroxide? If in all, then it must be calcium hydroxide and nothing else. If it was not calcium hydroxide, it must have some properties different from those of calcium hydroxide. But the Office was not told in what respects it corresponded and in what it differed.

In another case an applicant claimed, "molasses or similar material," but failed to state the essential characteristics of the other material in which it was similar to molasses.

In the decision of the Commissioner in ex parte Adler, 65 MS, Dec., 337, the words "such as" in a claim were condemned.

Another thing should be said about claims. It sometimes happens that the character of an invention is such as to constrain the Examiner to allow a claim in a form which would be objectionable in other cases. If an invention has truly been made the inventor is certainly entitled to some sort of protection, and if a claim in one form can not be allowed, then it should be allowed in some other form. To illustrate, take the case of tanning a skin. After a skin has been properly prepared by the usual steps, it is tanned by immersion in a tanning liquor or ooze wherein it is allowed to remain until tanned, the strength of the tanning liquor being generally periodically increased. The process seems to be the same whatever the constitution of the ooze may be, and it would appear that a change in the composition of the ooze does not alter the process. Let it be supposed that the inventor has made a new composition of matter for tanning. He can secure protection by claiming the composition. There would be no trouble in that case, but apparently he should not be allowed a claim for a new process. The process would be simply the old one of immersion. But let it be supposed that the material used for tanning was old but had never been used for that purpose. Some one discovered that picric acid would tan skins. Evidently a patentable discovery was made and the discoverer was entitled to patent protection. But how was he to be protected? It does not seem that he would be entitled to claim the substance even with a limitation of the statement of the use. A claim for a tanning agent consisting of picric acid, is after all only a claim for picric acid and such a claim would simply amount to claiming an old substance under a new name. Thus it appears that the Examiner would be obliged to grant a patent on the process; there would be no other way of protecting the invention. Cir-

cumstances alter cases even in the matter of the form of claims to be allowed.

When an inventor or discoverer sets into operation certain forces acting on certain materials and so conditions the forces in action that their resultant produces a new product in consequence of intra-molecular changes, he has made a patentable invention. Inventions along these lines are sometimes of vast importance and present most dazzling dreams of wealth. These dreams are sometimes realized.

Consider again for a moment, the cracking of petroleum. Theoretically a heavy hydrocarbon of the paraffin series represented say, by the formula $C_{21}H_{44}$ might be broken up so that each molecule would yield three molecules each containing seven carbons. Could this be done exactly a gallon of heavy residuum, worth perhaps 2 or 3 cents, would yield about a gallon and a half of excellent gasoline, worth at the present writing at retail about 30 cents. As the annual consumption of gasoline in this country is in excess of two billion gallons, it is easy to see how an invention along such lines is well adapted to raise the hopes of the inventor to great heights.

Sometimes the inventor enters fields in chemical researches which are either wholly new or in which very little experimentation has been done. Let it be presumed, say, he makes an invention in the field of photochemistry, in which very little has been done except along the line of photography, or being concerned with any of the numerous problems which may arise in biochemistry, makes discoveries involving the action of enzyms, antitoxins or various micro-organisms. In such cases problems are presented to this Office which, from the very nature of the case, must be treated quite differently from the manner in which ordinary mechanical inventions are treated.

The Cameron Sewage purification patent affords an interesting illustration. In that case it was found that by exposing sewage in a septic tank (i. e., one from which both light and air were excluded) for a considerable time to the action of such anaërobic bacteria as would operated under such conditions, that all the solids in the sewage

would be liquefied. Afterwards the sewage was run over baffles in the air and exposed to light where aërobic bacteria (i. e., those flourishing in those conditions) served to purify the liquefied sewage. The result claimed for this process was that sewage was converted into a liquid that was quite pure, if not potable. This patent was sustained (Cameron Septic Tank Co. *vs.* Village of Saratoga, 159 F. R., 453).

What is the Office to do with such processes? And what should be the treatment accorded to apparently foolish inventions? A very old U. S. patent claimed that by putting an alcoholic liquid in a tower 80 feet high, the water and alcohol would stratify. This was, of course, nonsensical and equally nonsensical was an old English patent for making gold out of wheat straw. This Office frequently has to deal with an application which appears perfectly foolish.

The Office is, however, not justified in absolutely refusing a patent on some procedure which at first blush appears hair-brained. How many of the inventions now in daily use, as, e. g., wireless telegraphy, or locating a bullet in a man's body by X-rays, would have been regarded as the ravings of a hopeless maniac by our pilgrim fathers. Notwithstanding, the Office is entitled to some evidence, more than the oath which forms a part of the application, that what appears to be a crazy notion, is something more than the vaporings of a lunatic. It will be remembered that a man who has been declared insane by the courts is not thereby incapacitated from filing an application for a patent.

In this lines of cases, it appears that sometimes an actual demonstration may be demanded. In other cases other evidence may be accepted as good and sufficient. Not infrequently this takes the form of a properly verified showing by recognized, disinterested experts, who either have themselves witnessed a demonstration, or have themselves conducted experiments. Such evidence should be carefully scrutinized, first as to the qualifications of the experts and second as to the character of the experiments. Ordinarily, only facts should be set forth in the affidavits, giving exact data of experiments witnessed or performed, with results obtained,

and the necessary tests by which the results were ascertained to be what they were alleged to be. There should, of course, be nothing of a hearsay character in the evidence.

In one case, the Examiner received an affidavit from one of the best known chemists in the country, one justly having the reputation of knowing more about a certain chemical art than any other man in the country. In the affidavit, the affiant stated that in the particular experiment described a certain pipe was said to introduce a certain gas into the system and he believed it did. Such a piece of hearsay evidence, relying on what he said he had been told by some unknown person, of course, vitiated the affidavit. In the same affidavit, the affiant, after detailing the facts (as supported by the hearsay evidence) gave his conclusions. That was, it may be remarked, rather out of place. It is the province of the Examiner to draw his own conclusions.

Is the Office obliged to accept conclusions or to acknowledge the correctness of what is set forth in affidavits? Not at all. What is set forth in the affidavits may be persuasive but is not necessarily conclusive.

In one case which came before the writer, an applicant alleged that certain miscible liquids after being thoroughly mixed would stratify and could be separated by decantation, and he based claims thereon. The Examiner knowing that no such action could occur rejected the claims as inoperative, whereupon the applicant submitted affidavits from five different persons that the operation would take place. He might as well have submitted affidavits that a man could lift himself by pulling on his boot straps. Upon the Examiner giving a final rejection, a petition was taken to the Commissioner who was asked to instruct the Examiner—

> "That an unsupported statement of theory by an examiner is not a sufficient answer to facts established by affidavits and exhibits."

In his decision, on the petition, the Commissioner stated that an examiner—

> "is not bound to accept affidavits as proofs unless he is satisfied of the truth of the allegations con-

> tained therein. He may reject the conclusions stated in the affidavits when those conclusions are contrary to well-known scientific laws or facts."
>
> Ex parte Davidson, 120 O. G., 2753.

Only one other point will be considered.

I have been speaking of applications which are concerned with inventions along paths that have been little trod and about which, therefore, little can be found either in patents or publications, and have thrown out a few suggestions about the treatement of such cases. I desire further only to state that in such cases, it appears that rather more should be required of the inventor in the way of describing his invention than in other cases. The statute requires that the specification shall be—

> "in such full, clear, concise and exact terms as to enable any person skilled in the art or science to which it appertains or with which it is most nearly connected, to make, construct, compound and use the same."

The case is supposed to be one in which there is no art or science before known and no nearly analogous art or science. Such cases are not very common but still they do occur. It seems clear that in such a case, the Office should require extremely explicit details, more than is necessary in other cases. Whether or not the Examiner should question the operativeness of the alleged invention or discovery in those cases, must depend upon how they appeal to him.

November 23, 1916.

Practice in Cases Involving Division.

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Practice in Cases Involving Division.

Approved December 14, 1914. Index to Decisions Construing United States Patent Code.

by

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WASHINGTON, D. C.
1914.

with claims to the alleged combination. Such cases were treated by rejecting the latter claims on the ground of aggregation without taking action on the merits of either separate invention. Then when the combination claims had been amended so as to be directed to one or the other invention the requirement for division would be made. This practice was changed in *ex parte* Mansfield and Hayes, 1902, C. D., 94, because it involved piece-meal action on the merits. The requirement for division should be made first and should indicate whether the combination claims may be included in the same case with one of the separate inventions or constitute a third group which if patentable at all must be embodied in a separate patent. The statement of the practice made in this decision is dicta, because the Commissioner reversed the Examiner on the ground that the application under consideration did not present independent inventions, but the practice has followed that dicta and has been sustained in later decisions. See *ex parte* Crain, 1907, C. D., 18, where the Commissioner pointed out that a requirement for division accompanied by a statement that certain claims are for aggregations is proper practice.

Where there are only two groups, namely, the combination claims and claims to a sub-combination and the Examiner is of the opinion that the combination claims are of the sort condemned under such decisions as *in re* Hawley, he should not require division but act on the merits of all the claims. (*Ex parte* Mumford, 1914, C. D., 84.)

If the requirement for division is not made in the first action the applicant, receiving action on the merits of several inventions, is benefited and not injured by the tardiness of the requirement. Consequently, that division was not required in the first action, is no reason for not making the requirement later. Rule 42 expressly provides that it may be made at any time before final action. (*Ex parte* Alminana, 1902, C. D., 293; *ex parte* Ramsey, 1909, C. D., 157.) The delay may arise through oversight, the Examiner failing to perceive that two independent inventions are involved, and it may be caused by the condition of the case as first presented, the claims being too indefinite to indicate

whether they cover independent inventions or not. In the latter case the proper practice is to first treat the claims until they are clear enough to make the question of division definite. (*Ex parte* Mayall, 1873, C. D., 134.) Neither of these circumstances goes to prove the dependence of the inventions and it has been repeatedly held that a requirement for division will not be set aside on account of the time when it was made. (*Ex parte* Lewis, 1904, C. D., 16; *ex parte* Benke, 1904, C. D., 63.)

When the claims had been stated to be allowable, but later, because of an amendment to Rule 41, division was required, the allowance of the claims was held no ground for waiving the requirement. (*Ex parte* Farquhar *et al.*, 1899, C. D., 205.)

Such tardy requirements are a cause of annoyance to attorneys and applicants and every effort should be made to make the first action completely cover the question of division whenever possible. Particularly annoying is a requirement for further division when the application has been once divided. Yet when the need for such further division arises the fact that it is a second requirement will not cause it to be set aside. (*Ex parte* Benke, *supra; ex parte* McHale, 1908, C. D., 185.)

The commonest cause of such a second requirement is failure to consult the Examiner who must handle the case after division is made. Accordingly when the independent inventions presented in one application are examinable in different divisions of the Office, the Examiner making the requirement for division should refer the case to the Examiner who has the class to which the divided case might belong, asking for a report. The Examiner to whom the case is thus referred will then indicate what, if any, lines of further division should be made. (*Ex parte* Brown, 1911, C. D., 111.)

A delay in making the requirement for division may under some circumstances be interpreted as indicating the existence of a doubt, and if a doubt exists it should be resolved in favor of the applicant. Thus, when a case has been allowed without requiring division and becomes forfeited, the requirement will not be sustained in the renewed application except in a very clear case. Even under these circumstances when the inventions are

clearly separate and independent, as where the articles are separately manufactured and sold, division will be insisted upon. (*Ex parte* Uhlig, 1903, C. D., 300.)

It is positively too late to require division when a patent is being reissued. (*Ex parte* Van Nostrand, 1913, C. D., 215.) This is because the Office is without authority either to require an extra fee or to issue a second patent without a fee. This reasoning would seem to indicate that the time when the right of the Office to raise the question of division terminates is upon payment of the final fee. The writer has not found, however, any case in which an attempt was made to withdraw a case from issue after payment of the final fee for the purpose of requiring division. The most delayed requirement for division which has been sustained of which the writer is aware occurred after an appeal on the merits and a decision thereon by the Commissioner. The requirement in that case was found to be in order because Rule 64 stated that matters of form will be insisted on only in cases presenting patentable subject-matter. (*Ex parte* Olan, 1897, C. D., 24.) The reasoning would not hold now, since not only has the rule been changed, but division is no longer regarded as a matter of form.

Although the Office may not require division in a reissue application the applicant may of his own motion present his reissue application in several parts. When one of these parts is ready for issue it will be held to await the termination of the prosecution of the others except when the Commissioner shall otherwise order (Rule 89). Consequently the Examiner should decline to act on a division of a reissue application filed after the parent reissue application has been allowed. (*Ex parte* Bayles, 1912, C. D., 76.)

At one time a somewhat similar practice required that all divisional applications should issue simultaneously but this was changed by *ex parte* Drawbaugh, 1893, C. D., 85.

At whatever time the requirement for division is made it should be definitly and explicitly stated. The claims belonging to each group should be named by number and whether any two of the groups may be prosecuted in one application should be clearly indicated. The reasons

why division is necessary should be stated so fully and completely that if applicant should appeal to the Board the Examiner's statement need make no point which applicant has not before had an opportunity to consider.

If the reasons are obvious they need not be stated. (*Ex parte* Reid, 1901, C. D., 123.) Merely because certain claims are drawn to a process and others to the apparatus used in such process is not enough always to support a requirement for division. Consequently in such cases the Examiner should point out why the particular process is a distinct invention from the apparatus. (*Ex parte* Ament, 1905, C. D., 166.) If the reasons for division can not otherwise be made clear, the Examiner should "point out the specific language in the respective claims which restrict them" to independent inventions. (*Ex parte* Ljungstrom, 1905, C. D., 541.) It is not necessary to cite references but, if references are needed to make the position of the Examiner clear or as evidence that the inventions have become distinct and separate fields of inventive effort, they should be cited. (*Ex parte* Reid, *supra.*) Such a citation of references is rarely needed and is a different thing both from the usual citations to show the state of the art and from an action on the merits. References cited to show that the requirement for division is properly made may not be the nearest references and may not afford the best guide in making an election, consequently the Examiner should in addition thereto cite whatever is closer of which he knows or which he can find by a cursory examination. (*Ex parte* Stearnes, 1890, C. D., 49.) If the reasons are clearly stated by the Examiner his action will not be regarded as improper because applicant thinks the reasons insufficient. (*Ex parte* Wallace, 1905, C. D., 411.)

If in the same action with the requirement for division the merits be treated, the Office gives a search and report on each of several inventions which is more than applicant is entitled to. Other applicants are thus kept waiting and the manifest unfairness of this is one reason why an action on the merits at the same time as a requirement for division is unusual. It is also ordinarily undesirable because it so frequently results in no response to the requirement, applicant meeting the rejec-

tions and ignoring the question of division. Even if applicant waits the full year before taking this action his case does not become abandoned. (*Ex parte* Wright and Stebbins, 1899, C. D., 153.) Consequently, premature treatment of the merits may cause two years' delay in the actual disposal of the case.

If, on the other hand, the Examiner for any reason gives an action on the merits it is not improper practice. He should, however, act on all of the claims and not on only part of them. Moreover he should make very clear that all of the claims have been treated and not leave some unmentioned. If this course is not followed the rejection made at the same time as the requirement for division will not support a final rejection in the next action. (*Ex parte* Goldman, 1902, C. D., 238; *ex parte* Lantzke, 1910, C. D., 100.)

Even when no action is made on the merits applicant should be given whatever information the Office can readily supply which will assist him in making his election. This is usually done by citing several patents to show the state of the art. Applicant does not have a right to such citations. They are given as a courtesy and do not represent the result of a careful search such as precedes an action on the merits. It is sufficient that the Examiner cite such art as he knows of or can readily find. (*Ex parte* MacKaye, 1903, C. D., 112.) If the Examiner knows of no references it is not sufficient merely to state that fact. He should make some search, although not an exhaustive one, and whatever references can be readily found should be cited and his letter should show that such a search was made. (*Ex parte* Moorhead, 1908, C. D., 48.) Yet where the Examiner stated reasons why the claims are not patentable without making citations it was presumed that he knew of none and a petition that he furnish further information was denied. (*Ex parte* Albert, 1901, C. D., 66.)

The cursory search and the resulting citations or statement that no references are found should be made for each of the groups of claims even when the Examiner contends that the several inventions are so numerous and unrelated as to make their presentation in one case an obviously incorrect practice. (*Ex parte* Bratt, 1910,

C. D., 46.) Without this service applicant can not make an intelligent election. Yet the failure of the Examiner to cite the state of the art as to one of the several inventions will not permit a shifting after election because references then cited show the elected claims are not patentable. (*Ex parte* Randall and Luck, 1901, C. D., 47.)

Applicant's election is not facilitated however by an extended action on the form of all the claims or of all parts of the description and drawing. When all but one group of claims have been canceled, the parts of the application corresponding to the canceled claims should also be removed from the case. It would, therefore, seem that the work of criticizing such parts is outside of that which the Office ought to undertake in return for one fee and is frequently wasted. It is not unusual consequently to defer action on formal matters also until the division is accomplished. Yet this is not in accordance with Rule 64 as usually interpreted. (*Ex parte* Blakeman, 1902, C. D., 25.) However, the writer has not found any decision covering this point.

Another interesting question on which there seems to be no decision arises in those cases in which the Examiner omits to make the cursory search. It is usual for the applicant to then reply to the requirement for division by requesting information as to the state of the art. If the applicant should wait until the end of the year before making such request would he then have a second year in which to make his response to the requirement?

Applicant's response must either elect one of the inventions, or must tranverse the Examiner's allegation that the inventions are independent. Any action which fails to accomplish one of these two results is not such as the condition of the case requires. Election is usually made by canceling all the groups of claims except the one representing the elected invention. When this is done the drawings and description ought to be restricted to correspond, but if applicant fails to so restrict them that of itself is not regarded as a failure to make proper response.

It is such a failure, however, to remove only the claims to some of the inventions and not all claims to all but

one invention. Thus when applicant had been required to divide into eight groups and in response canceled one group only and took no other action within the year his case was held abandoned. (*Ex parte* Naef, 1904, C. D., 230.) Not even the fact that applicant in good faith believed he had complied completely will save the case if the requirement and the lack of complete action in response are both clear. (*Ex parte* Pietzner, 1903, C. D., 142.)

An action which fails to cancel all but one group will not be unresponsive if reasons are presented why the requirement for division between the remaining groups is not good. Thus applicant may comply as to one line of division and traverse the requirement as to another line or request fuller statement of the second line without being unresponsive. (*Ex parte* Naef, 1902, C. D., 325.) Obviously applicant is entitled to have his arguments heard in this as in all matters affecting his interests and to have the question reconsidered in the light of such arguments. A refusal to divide will not of itself work an abandonment, because applicant is entitled to a reconsideration and a second action under Rule 67. In fact, an appeal from the requirement can not be considered until after such reconsideration. (*Ex parte* Lovejoy, 1904, C. D., 52.) But the refusal to divide must be accompanied by a statement of the reasons why the application should not be divided. The mere statement that division is not warranted is not enough. (*Ex parte* Henri, Helbronner and Recklinghausen, 1912, C. D., 204.) When the Examiner states no reasons in connection with the requirement and applicant makes no reply except a request for reconsideration without argument neither has fulfilled his duty. (*Ex parte* Tyson, 1902, C. D., 476.)

It has even been held that a request for reconsideration in a case where there was no possible room for doubt was an action obviously intended to prolong the prosecution of the case and therefore would not prevent abandonment. (*Ex parte* Bassett, 1902, C. D., 87.) It seems, however, doubtful whether another case can arise with circumstances showing so plainly that the action could not have been expected to advance the case. The

same Commissioner only six months later refused to follow *ex parte* Bassett in a clear case of claims to different species. The later decision is based on the ground that "there may well be a difference of opinion as to whether certain claims are limited to one species" and this is properly subject to reconsideration if applicant traverse the Examiner's position.

When the requirement for division is traversed and upon reconsideration the Examiner adheres to his former opinion he should refer the matter to the Law Examiner under Order 2115 and, if the Law Examiner approves, make the requirement final. Like any final action this should not be done when applicant has not had an opportunity to be heard, but a mere variation in the form of the requirement which does not alter the questions involved will not prevent making it final. Thus where the Examiner in stating the several groups into which division was required, failed to mention one claim but it was perfectly obvious with which group this claim belonged so that the failure to mention it did not act to the prejudice of the applicant, it was held that the Examiner properly made his requirement final in his next action. Applicant's contention that the requirement as to this one claim did not receive reconsideration was founded upon empty technicality. There was no new question to be considered in regard to this claim and so applicant had had his opportunity to present arguments on the questions involved. (*Ex parte* Tuttle, 1905, C. D., 274.)

That applicant does not make use of the opportunity to present the reasons for waiving the requirement for division will not prevent a final action thereon. So when the Examiner acted on the merits of the claims at the same time that he required division and the applicant responded with amendments to avoid the references and a merely perfunctory argument on the requirement it was held proper practice to make the requirement final. (*Ex parte* Chamberlain, 1902, C. D., 354.)

The requirement for division having been made final and applicant still wishing to traverse it, his next step is to appeal to the Board. Formerly this was not done but instead there was a petition to the Commissioner on the

theory that the question of division was not one of merits but of form. The right to an appeal was settled in Steinmetz *vs.* Allen, 1904, C. D., 703. The applicant in this case was required to divide under Rule 41 which required that process and apparatus be always separated. It was because the validity of this rule was attacked that the United States Supreme Court took jurisdiction. The rule was found to exceed the Commissioner's authority because it left no discretion. It is interesting to note in this connection that Commissioner Duell when he announced that it was proposed to amend Rule 41, stated the express ground that "this question should be removed from the domain of the discretion of the Office." (*Ex parte* Boucher, 1899, C. D., 133, see page 39.) The court in Steinmetz *vs.* Allen, thought it perfectly conceivable that there could be a case in which the process and apparatus were not separate inventions. The holding that old Rule 41 was invalid does not mean that division may not be required in cases where the two inventions are independent and even in cases of process and apparatus division should be required when it is proper. The requirement being subject to review by the Board. (*Ex parte* Frasch, 1904, C. D., 104.)

The court's conclusion that a requirement for division is in effect a rejection from which there is an appeal to the Board is based on an assumption that there was unity of invention in the case before it. Such assumption was made because the Commissioner did not deny such unity. It will not follow, however, that the change in Office practice resulted from accidental circumstances in the case before the court because the refusal of a well founded right of joinder would give rise to the same procedure as the assertion of a poorly founded one.

Whether the result of accidental circumstances or not Steinmetz *vs.* Allen has established the rule that requirements for division are appealable (*Ex parte* Emerson, 1904, C. D., 118; *ex parte* Crain, 1907, C. D., 18), and this conclusion has been confirmed by the Court of Appeals. (*In re* Frasch, 1906, C. D., 648.) This practice has been carried to the point where an applicant can not obtain a review by petition of such a requirement (*Ex parte* Strimban, 1912, C. D., 195), even by expressly

waiving his right to an appeal. (*Ex parte* Mumford, 1914, C. D., 84.)

Although the change in practice resulted from a case involving process and apparatus it applies to any case involving division such as one presenting two species. (*Ex parte* Creamer and Knowlton, 1904, C. D., 295.)

A petition has, however, been entertained which raised the question whether the Examiner had a right to require division or was estopped. In making this decision, however, the Commissioner explicitly stated that whether or not division was correctly required could be determined only by appeal. (*Ex parte* McHale, 1908, C. D., 185.)

The question of the independence of the inventions must be settled by appeal and not by petition even when it arises in some other way than by a requirement for division, as, for example, when applicant is required to cancel claims which constitute an attempt to shift after having made an election. (*Ex parte* Barnes, 1905, C. D., 69.)

The appeal to the Board covers all matters which go to the merits of the question of division. Thus, where a question of new matter was germane to the question of division, the Commissioner refused to decide on petition the question of new matter. (*Ex parte* Fadem and Berman, 1910, C. D., 87.)

From the Board an appeal on the requirement for division may be taken to the Commissioner (*Ex parte* Weston, 1911, C. D., 218), and from the Commissioner to the Court of Appeals. (*In re* Frasch, 1906, C. D., 648.) The court, however, will not disturb the finding of the Commissioner on the question of division except in cases of clear abuse. (Steinmetz *vs.* Allen, 1904, C. D., 703, see page 712.)

A petition under the old practice could obtain a review of the question for division even though it showed that the requirement was prematurely made final if the petitioner requested such review. (*Ex parte* Pickles, 1904, C. D., 75.) Now it would not be possible to question the propriety of making the requirement final and at the same time determine the necessity for division because the two matters are decided by different tribunals.

When the requirement for division has been made final applicant must either comply or appeal. If he attempts to take any other action his case is likely to become abandoned. (*Ex parte* Wallace, 1906, C. D., 461.) If he decides to comply he should cancel all claims and all disclosure not related to the elected invention. It is within the province of the applicant to decide which group of claims he will retain. Consequently the examiner may not require that specified claims be canceled unless applicant has already made an election. (*Ex parte* Butcher, 1904, C. D., 60.) In fact the Examiner may not make the selection when requested to do so. (*Ex parte* Tuttle, 1904, C. D., 537.)

It is quite usual to cancel the claims but retain drawings and description pertaining to the inventions not elected. The requirement that such matter be removed should be made in the Examiner's action responding to the cancellation of the claims. In a case of process and product applicant may not retain the non-elected matter on the ground that it is necessary to the understanding of the claimed invention because it discloses a good way of making the claimed article. The process being a different invention from the product its description in a patent for the product is prolixity. (*Ex parte* King, 1902, C. D., 158; *ex parte* Simonds, 1888, C. D., 89.)

When, however, the division is between one species and another and a generic claim remains in the case, applicant may retain all the figures on which such claim reads even though one species differs from the other by including elements which, if claimed, would cause the case to be differently classified. (*Ex parte* Garland, 1903, C. D., 414.)

The Examiner should particularly scrutinize the statement of invention because as originally drawn it is almost certain to be directed to more than the elected invention but the applicant seldom changes it when he divides. The title also frequently needs alteration as a result of division, yet seldom receives attention. None of these matters is, however, regarded as so essential a part of the act of dividing that the failure to attend to them constitutes an unresponsive action. Until the Examiner states the requirement for additional changes

all that the applicant needs to do is to cancel all claims not inconsistent with his election.

Such cancellation of claims is the usual way of indicating which invention is elected. Applicant may, however, before the question of division is determined indicate by express statement which group of claims is elected and have an action on the merits of that group. The other claims then merely remain in the case until the merits of the elected group are determined or their rejection has become final. Then both the question of division and the merits of the elected claims can be appealed to the Board in one action. (*Ex parte* King, 1913, C. D., 105.) This does not reverse entirely such decisions as *ex parte* Pickles, 1904, C. D., 126; because, although it permits the claims to remain in the case it does not require an action on the merits of more than one group. Action on the merits will not be made before division even though an appeal is to be had on the requirement (*ex parte* Snyder, 1904, C. D., 242) except under the practice indicated in *ex parte* King.

Applicant having indicated his election without acquiescing in the requirement for division will not be required to eliminate from the drawing and description the non-elected devices. Where the elected invention is examinable in a different division the case should be transferred in spite of the presence therein of claims and disclosure indicating a different classification. Such cases should, however, be called to the attention of the Commissioner for special directions. (*Ex parte* Stemple, 1913, C. D., 262.)

Election may be made also by claiming but one invention in the case as first filed. Later attempts to claim others should be met by requiring such claims to be canceled. (*Ex parte* Moorhead, 1911, C. D., 242.) Whether the requirement that such claims be canceled be correct depends on whether the Examiner's conclusion that the case presents two inventions is right, consequently, the requirement should be preceded by a consultation with the Law Examiner under Order 2215 and from the repetition of such a requirement an appeal lies to the Board. (*Ex parte* Lawley, 1904, C. D., 539.) If the original claims are generic there is no elec-

tion and applicant may later make narrower claims to whichever species he desires. (*Ex parte* Plimpton, 1902, C. D., 450.) In the consideration of the question whether the claims first presented were specific to one of the several inventions, applicant is to be given the benefit of every reasonable doubt, (*Ex parte* Cram, 1903, C. D., 1), but claims specific to one species constitute an election even though the case also contains claims broad enough to read on the other species. (*Ex parte* Maddux, 1903, C. D., 312.)

Again, election may be made by canceling claims to all inventions except one where no requirement for division has been made. The effect of such election is, however, as if made in response to a requirement and applicant may not later shift if the inventions are independent. (*Ex parte* Barnes, 1905, C. D., 69.)

An election, express or constructive, is the only way of obtaining an action on the merits before the question of division is disposed of but other ways have been attempted. One way consisted in canceling all but one group of claims and at the same time stating the intention to reinsert the canceled claims after action on the merits had been had. The Examiner met this by requiring that if the canceled claims were to be reinserted at all it be done at once. It was held that this requirement was proper but that the Examiner would also have been justified in regarding the action as an election, thus making it impossible ever to reinsert such claims. (*Ex parte* Scott and Deats, 1909, C. D., 182.)

Such a reinsertion will not be permitted to save an additional appeal. (*Ex parte* Fritts, 1903, C. D., 286.) Even where the applicant has been misled by the Examiner mistakenly stating that the claims of one group are allowable, he may not shift after election. (*Ex parte* Noble, 1898, C. D., 149.) When the Examiner wrongly required that certain claims be canceled when he should have given applicant a chance to elect and applicant did cancel the claims they may not afterward be presented in that application. (*Ex parte* Johnston, 1887, C. D., 64.) In the same way claims canceled by an associate attorney in response to a requirement for division may not be reinserted even though the principal's

judgment differ from the associate's. (*Ex parte* Clausen, 1899, C. D., 183.)

The reason why such reinsertion is not permissible is because in prosecuting one group of claims applicant receives from the Office all the service to which he is entitled in return for one fee. Consequently acts on his part which cause the Office to render such service, rather than acts which indicate his intent, determine whether election has been made. Thus to present claims to but one invention as the case is first filed will preclude the prosecution of claims to another invention in that case. If on the other hand claims are suggested under Rule 96 after the requirement for division has been made but before it has been complied with, to make the suggested claims and prosecute the interference is not to make an election. (*Ex parte* Burk, 1912, C. D., 338.) The interfering claims may even be admitted after an election although to a slightly different species (*Ex parte* Priebe, 1915, C. D., 39) and applicant should be required after the interference to again limit himself to one species but when the interfering invention differs widely from the elected one and the application has been allowed, insertion of such claims is refused. (*Ex parte* Stimson, 226 O. G., 699.) On principle it should constitute an election if applicant presented other claims to the interfering invention, either before the declaration of the interference or under Rule 109, but no such distinction is found in the decisions.

When applicant through mistake has made an undesirable election; he can, if he act before the Office treats the elected claims on the merits, shift to the other invention. (*Ex parte* Zabel, 1888, C. D., 35.) This curious result follows necessarily from the principle that the examination of one group of claims is what prevents a shifting to a second group.

Another rather surprising result comes from the same principle. If applicant's case originally presented three inventions A, B, and C, and in response to the requirement for division he canceled the claims to C he is not estopped to elect C when the requirement for division between A and B is repeated. As he never presented claims to a single invention he received no action on the

merits and consequently the Office has not rendered him service in return for his fee. He may therefore apply that fee to payment for the examination of claims to invention C. (*Ex parte* Maxim, 1888, C. D., 26.) A later decision, however (*ex parte* Moorhead, 1911, C. D., 242) holds that when applicant cancels one group of claims in response to a requirement for division he can not thereafter prosecute claims for that subject-matter in that application. There is also an old decision (*ex parte* Wharton, 1887, C. D., 88) which refuses the right to shift after no single invention had been elected but in that case the proposed new claims were to new matter.

The same principle gives rise to another line of cases that permits an apparent shifting of ground. An applicant sometimes insists on prosecuting his claims in the form of process claims when his case presents no true process but merely an article or perhaps a machine. When applicant has become convinced of his error he may present claims in the proper form even though it be after appeal and the claims are made in response to a recommendation by the Commissioner. (*Ex parte* Trevette, 1901, C. D., 170.) But if there is a genuine method in applicant's case in addition to the machine the prosecution of the method claims constitutes an election and applicant may not shift therefrom. (*Ex parte* Feld, 1904, C. D., 376.)

An attempt to shift after an election is not such an action as the state of the case requires and will not prevent abandonment. (*Ex parte* Stroh, 1912, C. D., 208.) It has been regarded, however, as an error which may be remedied by promptly presenting claims to the elected invention, particularly where the fact of shifting is not obvious. (*Ex parte* McGenniss, 1902, C. D., 422.) Also, if the Examiner overlooks applicant's change of ground and acts on the substituted claims there is no abandonment. (Meden *vs.* Curtis, 1905, C. D., 272.) When the oversight is discovered, however, the applicant will be confined to the elected invention.

To work an abandonment the attempt to shift must make no real progress in the prosecution of the case. Thus, where applicant rewrote and otherwise responded concerning a large number of claims to the elected inven-

tion and inserted one claim to a different invention it was held that the Examiner should treat the elected claims and require cancelation of the other without holding the case abandoned. (*Ex parte* Gally, 1908, C. D., 80.)

The proper treatment of an amendment presenting claims to an invention other than the elected one is to enter it and require that such claims be canceled. (*Ex parte* Selle, 1904, C. D., 221.) The older practice of refusing to enter the amendment became incorrect when Steinmetz *vs.* Allen settled that such questions should be reviewed by the Board. Even under the old practice if the amendment was (improperly) entered the applicant had an appeal to the Board from rejection on the ground of election. (*Ex parte* Bailey, 1890, C. D., 123.) The claims should not receive an action on their merits and should not be rejected and applicant should not be given a second chance to elect. The essence of the distinction betwen a rejection and a requirement that the claims be canceled is pointed out in *ex parte* Miller, 1905, C. D., 228. The requirement that claims be canceled under such circumstances is not reviewed on petition (*ex parte* Weaver, 1912, C. D., 80) and the same is true of a requirement that a claim be canceled to maintain a line of division between copending cases. (*Ex parte* Pope, 1912, C. D., 141.) When one of the copending cases is in interference it is particularly important that a clean line be kept between them. (Burchartz *vs.* Nolan *et al. vs.* Christiansen, 1912, C. D., 196.)

The requirement that a claim be canceled can not be met by adding an introductory clause to bring it into the same class as the elected claims because an introductory clause adds nothing to the claim. (*Ex parte* Gally, 1903, C. D., 480.)

It would seem that the question for the Board to decide upon an appeal from a requirement that claims be canceled is whether the claims are not to the elected invention, but *ex parte* Gally seems to indicate that a review of the correctness of the requirement for division may be obtained by reinserting the canceled claims. This would seem, however, to be incorrect because applicant having once accepted the Examiner's position that the groups of claims are to independent

inventions it would seem that this question had become *res adjudicata* as truly as if the decision were by the Board.

Possibly a review of the correctness of the requirement for division could be obtained by inserting in a divisional case claims from the parent case. *Ex parte* Ayers, 1915, C. D., 34, which indicates that when a case contains the statement that it is a division of a parent case it may be so amended as to make that statement correct, has been interpreted by certain high officials of the Office as indicating that anything contained in the parent case may be inserted in the divisional case. If *claims* were thus inserted and this interpretation is correct the requirement that they be canceled would automatically cause a reconsideration of the propriety of the original requirement for division.

The doctrine of *res adjudicata* applies only to the question actually raised and so when a requirement for division has been sustained, that act of the Board will not prevent a requirement for further division from being made. (*Ex parte* McHale, 1908, C. D., 185.) Such belated requirement should of course, be avoided whenever possible, as it adds to the annoyance which attorneys always feel when division is required.

This dislike for the requirement for division has given rise to many attempts to avoid it beside the straightforward ways of election and appeal. The most common form of such an attempt is the presentation of aggregation claims. Thus applicant having presented claims to A and claims to B and being required to divide, responds by amending the claims to B so that they are claims to A plus B. In the earliest published decision dealing with a case of this sort (*ex parte* Franklin, 1873, C. D., 116) the Examiner still insisted on division and the Commissioner sustained the requirement but at the same time commented adversely on the A plus B claims using the same reasoning as *ex parte* McNeil, 1902, C. D., 313, and *in re* Hawley, 1906, C. D., 576. At even this early date that reasoning had already been published about two years. (See *ex parte* Eynon, 1871, C. D., 239.)

The attempts to meet the filing of aggregation claims by some action which should separate the real inven-

tions present in the case gave rise to much confusion in the early decisions because division of an application was not always associated with a separation of the claims into groups. Thus we read in a decision concerning the oath that "should the Office decide that the combination is not a legitimate one, and require the applicant to divide" an oath made to the combination would not serve for the divisional cases. (*Ex parte* Heginbotham, 1875, C. D., 93.) Also we find an instance where the Examiner insisted upon division although the case contained but one claim. (*Ex parte* Rice, 1874, C. D., 44.) The relation of this source of confusion to the practice which grew up of first disposing of the question of aggregation is seen in *ex parte* Bullard, 1888, C. D., 169, where the applicant originally presented a claim to A and two other claims one to A plus specific B, and one to B plus specific A. After several actions in each of which the Examiner insisted that between A and B there was no combination the applicant appealed to the Board. The Commissioner directed that the appeal be forwarded because if the action against the A plus B claims was not a rejection it ought to have been one and said "if the action be affirmed on appeal, then division may be required between the elements" clearly indicating that a further prosecution before the Examiner after decision on appeal was contemplated.

The anomaly presented by this practice of making applicant appeal to the Board from a rejection of certain claims while other claims had received no action on their merits was defended in *ex parte* Carter, 1889, C. D., 100, where the Commissioner limited it to cases containing claims to A, B, and A plus B. The decision says that the presence of the A plus B claims prevents requiring division between the A claims and the B claims. Such a limitation of the decision was disregarded later, however, and it was declared proper practice to reject claims to A plus B before requiring division although the claims in the case included not only claims to A but also to C and D. (*Ex parte* Tymeson and Borland, 1898, C. D., 48.) This continued to be the practice until *ex parte* Mansfield and Hayes changed it in 1902.

Because aggregation claims were frequently treated

by the Office with a view to obtaining a separation of the inventions in the case, it occasionally happened that a rejection on the ground of aggregation was met by a petition to the Commissioner, that being formerly the method for obtaining a review of a requirement for division. The decisions are uniformly to the effect that an appeal to the Board was the only answer to any such rejection, as it was not a requirement for division. (*Ex parte* Webber, 1902, C. D., 93.)

Whether an applicant who presents aggregation claims has made an election must be determined by noticing whether he has obtained a search and an action on the merits on one of the inventions. Thus where applicant originally presented claims to A and other claims to A plus B and division was not required but later he canceled the A elements from the combination claims leaving them B claims the requirement that the B claims be canceled was sustained. (*Ex parte* Mitchell, 1913 C. D., 233.)

In another case applicant was required to divide between claims to A and a group of claims including claims to A plus B and claims to B and he responded by amending his A claims so that they became claims to A plus B. This amendment was made in the face of the warning that A plus B was not a good combination and not patentable for reasons stated in *ex parte* Casler, 1900, C. D., 5. The claims thus presented were rejected on the ground of aggregation, presumably no search or only a cursory one being necessary for this rejection. Applicant then removed the B element from the combination claims and canceled his B claims. The Examiner refused to enter this amendment but was reversed. The applicant never had an action on the merits based on a search and consequently might still claim that service in return for his fee. (*Ex parte* Day, 1903, C. D., 279.)

A case at first sight similar to this in which the decision was not published presents just the difference needed to illustrate this principle. In this case applicant presented claims to A and claims to B and division was required. He then substituted claims to A plus B and was rejected on the ground that the combination was old, references being cited to show that fact. After several

amendments the combination claims were finally rejected. Applicant then attempted to offer for appeal claims to A and the Examiner's refusal to admit the amendment was based on the ground of shifting after election as well as the ground that the claims applicant sought to present were not merely a better form of the finally rejected claims. The Commissioner sustained the refusal but did not indicate his grounds. It is evident from the preceding discussion that both grounds were good.

Attempts to add combination claims after division has been made are not necessarily a shifting of ground. The combination, if patentable, may or may not be a distinct invention from the element elected and only in the case where it is distinct may the requirement that it be canceled be made. If such combination claims are not to a different invention they must receive action on their merits. (*Ex parte* Brownell, 1901, C. D., 31.)

There are not many perplexities or close questions involved in the practice concerning division. The question of when a case ought to be divided is another and far more difficult matter which is left for some more able writer to present. If the foregoing gives a clear account of the course to be pursued in cases involving the question the object of this paper is accomplished.

NEW USES OF OLD INVENTIONS

A paper read October 12, 1916, before the Examining Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1916.

New Uses of Old Inventions

By

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In many instances an invention has uses other than that which was in the mind of the inventor at the time of the completion of his invention and for which it was designed. Such new uses may or may not be the subjects of patents, depending upon whether or not their discovery called into play the inventive faculty.

In order to prevent confusion of terms we will settle upon a meaning for the words "new use." It is convenient to consider them as meaning use under new conditions or upon a new object of a known invention absolutely without change therein or else with such changes merely as might occur to the average person skilled in the art in which the new use is found. It will be apparent that if in adapting the invention to a different purpose further changes in the invention are made, that is, changes involving inventive genius, then the old art or instrument disappears and a new one is substituted, so that *no* use of the old invention is in question. This, then, excludes from our definition of new use any use in which the old invention is materially, that is to say patentably, changed.

New uses may be either analogous or non-analogous. The former are mere imitations of the use intended by the inventor of the art or instrument itself. They are double uses, and never involve invention. Non-analogous uses are those in which a new function, mode of operation, or result is brought about. Such uses result only from invention or discovery in the sense of the patent law. Robinson in his work on Patents states that a new use, meaning a patentable new use and therefore a non-

analogous use, "exists when a known invention is applied in a known manner to an object not heretofore known to be susceptible to such application from its analogy to other objects, but whose susceptibility has been discovered by the inventor of the use."

It is sometimes said that the nearness to or remoteness of the new art to which a thing is transposed from the old art in which it originally existed is important in deciding the question of invention, but it is submitted that the real test is whether the functions of the thing in its two uses are analogous or non-analogous rather than whether the arts in which the two uses are found are analogous or not.

The new use of a known invention frequently must be protected, if at all, by a patent in a different statutory class from that of the original invention. For instance, a new use of a machine, manufacutre or composition of matter may constitute a step in a new process or method; and an old machine or process may be used to make a new product for which a patent application may be made. There are also other new uses which fall within the same statutory class as the original invention. For example, a known invention in any one of the statutory classes may be united with other elements to constitute a true combination; and a novel element, not theretofore separated from its use in a combination, may when employed by itself be the subject of an invention. These latter cases are extremely common in machine applications, machines being composed usually of old elements used in a new way by being brought into new relations with other parts.

The fact that the workmen in the art in which a device was first used do not ordinarily have anything to do with the art to which the device is transposed by the new use will not make the second use an invention rather than a double use. See Rogers *vs.* Fitch, 81 F. R., 959, in which the complainants in an infringement suit sought to eliminate an anticipating patent from the case by the suggestion that the workmen who make mattresses for beds do not make seats for railroad cars.

It is perhaps superfluous to state that no new use of a thing can patentably affect the thing itself. A machine

used in a new way, without any essential change in its structure, is not a new machine.

With this short statement of the theory and principles of double use and non-analogous use, we will proceed to a consideration of some of the leading decisions upon the subject.

NEW USE OF OLD ART OR PROCESS.

An English case, known as the "spent madder case," is one of the most frequently quoted cases falling under this head. Prior to the issuance of the plaintiff's patent garancine had been obtained from fresh madder by the application of sulphuric acid and hot water or steam. The plaintiff discovered that the same process could be employed in obtaining further garancine from spent madder, which rendered the latter valuable whereas before it had been worthless. The appellate court held that whether the spent madder was the same as fresh madder except in the quantity of garancine contained or whether it was different chemically from fresh madder was the question of fact that should have been submitted to the jury, and this appears to mean that if the spent madder did possess different chemical properties and was really a different substance from fresh madder, the new use of the process was more than a mere double use. One of the judges aptly illustrated the point by saying that it was just as if the discovery had been made that, by applying to potatoes the process used for obtaining garacine from madder, a valuable coloring matter could be obtained. Steiner v. Heald, 6 Eng. Law & Eq. R., 536.

In Brown v. Piper, 10 O. G., 417, a Supreme Court case, the patent alleged to be infringed was for a process of preserving fish, etc., "in a close chamber by means of a freezing mixture having no contact with the atmosphere of the preserving chamber, substantially as set forth." The court held the patent invalid in view of the ordinary ice cream freezer, saying that it involved "simply the application by the patent of an old process to a new subject, without any exercise of the inventive faculty, and without the development of any idea which can be deemed new or original in the sense of the patent

law. The thing was within the circle of what was well known before and belonged to the public. No one could lawfully appropriate it to himself, and exclude others from using it in any usual way for any purpose to which it may be desired to apply it."

A method of making imitation onyx by superposing different colored layers of celluloid and cutting the hardened mass across the layers, was held to be anticipated by a similar method of manufacturing imitation marble from cement. Arlington Manufacturing Company v. Celluloid Company, 97 F. R., 91.

Another Supreme Court case, Lovell Manufacturing Company *vs.* Cary, 62 O. G., 1821, held that a process of tempering steel bed springs was a mere double use of the same process for tempering hair springs of clocks and wire bells for clocks.

In Howe *vs.* Abbott, 2 Story, 191, the application of an old process of twisting, curling, baking and steaming hair for mattresses, cushions, etc., to use in treating strips of palm leaf for the same purpose was held not patentable.

Doing a thing by machinery which was theretofore done with a hand tool does not make a new method. Pennsylvania, etc., Mfg. Co. *vs.* Conroy, 159 F. R., 943.

NEW USE OF OLD MACHINE.

A really new use of an old machine, unmodified, even though inventive genius was brought into play in discovering that use will not support a patent for the machine itself, because the machine is either already the property of the public or will be after the expiration of the patent protecting it. If the new use of the old machine produces a new product the invention may be protected by a patent for the product. Otherwise the proper and only way to cover such an invention is by a claim for the process or method in which the new use of the old machine constitutes a step. See the opinion of Judge Taft in Stearns & Co. *vs.* Russell, 84 O. G., 1434, in which the application of a device designed for lifting sheets of paper by exhausting the air in hollow points of fingers in contact with the paper to the lifting and holding of pills while dipping them in a gelatine bath was con-

sidered to be a mere analogous use, no substantial change in the device being necessary. The court said: "Where it requires substantially no change in the old device to adapt it to the new use, such adaptation can not be the subject of a patent, no matter how remote and unthought of the new use may be, provided no new force or mode of application be necessary in carrying on such use. Otherwise, in case the device has been patented, the right of monopoly of the prior patentee is invaded by excluding him from a use of a machine which by the rule stated and the authorities cited above he is entitled exclusively to enjoy. If, however, the adaptation of the old machine to the new use involved a change in its form or operation, it may by the changes and very newness of the use or function become either a new machine or an improvement on the old machine and be patentable as such, or the new use of the old machine may result in a product which is itself patentable, or the use may be a step in a new and patentable process."

A familiar case in this statutory class of invention is that of Potts *vs.* Creager, 70 O. G., 494, a Supreme Court case. Potts sued Creager et al. for infringement on a patent on a machine for disintegrating clay, which consisted of a cylinder having therein longitudinal grooves in which were mounted cutting bars, means for supporting the clay in contact with the cylinder and means for positively feeding the clay into the machine. The defendant sought to show that the patent was invalid on account of anticipation, citing many patents from numerous arts, of which the court considered only one sufficiently close in structure to call for much consideration, and that was a machine for finishing and polishing wood in which the construction of the cylinder was the same as Pott's cylinder except for the fact that the cutters were glass instead of steel. The purposes of the two machines, however, were totally different and the effect upon the material worked upon was totally different, which was indicated by the fact that in Pott's machine the material removed from the mass of clay by the cutters was that of which the finished product was to be made, while in the wood-working machine the shavings and dust removed by the cylinder were merely waste. The

court considered the remoteness of the wood-working art from the clay-working art of importance but secondary in importance to the remoteness in the functions of the two machines. Quoting from the decision:

> "But where the alleged novelty consists in transferring a device from one branch of industry to another, the answer depends upon a variety of considerations. In such cases we are bound to inquire into the remoteness of the relationship of the two industries; what alterations were necessary to adapt the device to its new use, and what the value of such adaptation has been to the new industry. If the new use be analogous to the former one the court will undoubtedly be disposed to construe the patent more strictly, and to require clearer proof of the exercise of the inventive faculty in adapting it to the new use—particularly if the device be one of minor importance in its new field of usefulness. On the other hand, if the transfer be to a branch of industry but remotely allied to the other, and the effect of such transfer has been to supercede other methods of doing the same work, the court will look with a less critical eye upon the means employed in making the transfer.
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> . . . . . .
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> "It often requires as acute a perception of the relations between cause and effect, and as much of the peculiar intuitive genius which is a charactteristic of great inventors, to grasp the idea that a device used in one art may be made available in another, as would be necessary to create the device de novo.
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> . . . . . .
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> "As a result of the authorities upon this subject, it may be said that, if the new use be so nearly analogous to the former one, that the applicability of the device to its new use would occur to a person of ordinary mechanical skill, it is only a case of double use, but if the relations between them be remote, and especially if the use of the old device produce a new result, it

> *may* at least involve an exercise of the inventive faculty. Much, however, must still depend upon the nature of the changes required to adapt the device to its new use."

The Hobbs *vs.* Beach case, 94 O. G., 2357, was a case involving the question whether or not a machine for cutting, pasting and attaching paper strips bearing addresses to newspaper wrappers was an anticipation of a patent for a machine for cutting pasting and attaching paper strips to the corners of paste-board boxes for the purpose of holding them together. The court held that it was not an anticipation. In the earlier machine there was a flat surface upon which the newspaper rested and a descending plunger with a flat-working face for pressing the strip onto the newspaper wrapper. In the box machine clamping dies having angular working faces were used, between which dies the corner of the box was pressed. The fact that the box machine had supplanted the means used up to that time for the same purpose appears to have been given considerable weight by the court, but it is believed that the decision could not have been otherwise had this argument not been presented.

An expansible piston in a pump is a reference for the same thing in a syringe. "A syringe is a kind of pump, and these uses are not only analogous, but closely so, for the expansible piston is expanded in each and works precisely as in the other. The difference, if any, is only in the size; but this does not affect the relation or operation of the parts. As machines, they appear to be the same." Tagliabue *vs.* Sondermann, 75 O. G., 188.

If a new mode of operation results from a reversal of motion of one of the parts of a machine, it is more than double use of the old machine. Keystone Mfg. Co. *vs.* Adams, 151 U. S., 139.

In Mast, etc., Company *vs.* Stover Mfg. Company, 177 U. S., 485, the device sued upon was a means for converting rotary motion into reciprocatory motion in a windmill. The broad idea was old in windmills and the particular gearing employed was old in other arts for the same purpose broadly. The patent was held void for double use.

The planing of ice and the planing of wood are analogous in spite of the fact that workmen who do the one do not ordinarily do the other. Briggs *vs.* Duell, 93 F. R., 972. See also, ex parte Briggs, 75 O. G., 1854.

In Deering *vs.* McCormick Harvesting Machine Co., 52 O. G., 1223, a claim for apparatus for raising, lowering and fastening the grain platform of a harvester was held anticipated by a device for doing the same thing to a window sash, there being no mechanical difference between the functions of the two devices.

In Model Bottling Co. *vs.* Anheuser, 190 F. R., 573, an apparatus for pasteurizing beer to preserve it was held to be a mere double use of a like apparatus for curing fish.

NEW USE OF OLD MANUFACTURE.

In the English case of Harwood *vs.* Northern Railway Co., 11 H. L., 654, the patent sued upon was for a rail joint in which the rails were held together by means of plates called "fishes," placed on both sides of the rails at the joint and bolted thereto, the plates having grooves therein in which the heads of the bolts rested to prevent their turning. The evidence showed that a bridge known as the Hackney bridge, had in it horizontal beams made up in sections joined by scarf joints with iron plates above and below the joint held in place by means of bolts, and that these plates were similar in form to applicant's fishes. The patent was held invalid on the ground of double use and the decision was affirmed in the House of Lords.

In the Supreme Court case of Tucker *vs.* Spaulding, 1 O. G., 144, suit was brought for the infringement of a detachable saw tooth. The court held the patent invalid as a mere double use of a prior patent for "a new and useful method of securing cutters to rotary discs," and said that if what the latter patent actually did is in its nature the same as sawing and its structure and action suggested to the mind of an ordinarily skillful mechanic this double use to which it could be adapted without material change, then such adaptation to the new use is not a new invention, and is not patentable.

In the Supreme Court case of Smith *vs.* Goodyear

Dental Vulcanite Co., 11 O. G., 246, the substitution of hard rubber plates for false teeth, where gold, tin and other materials had been used before, rubber permitting a slight "give" in response to movements of the jaws was held *not* a mere double use. The court said that a new product was the result, different from all that had preceded it, not merely in degree of usefulness and excellence, but different in kind, having new uses and purposes.

In Pennsylvania Railroad Co. *vs.* Locomotive Engine Safety Truck Co., 27 O. G., 207, the Supreme Court held that an apparatus for providing pivotal movement between the forward truck of a railroad car and the car body, when applied to the forward truck of a locomotive engine, involved mere double use.

In St. Germain *vs.* Brunswick, 51 O. G., 1129, a Supreme Court case, a revolving billiard cue rack, so far as the revolving feature was concerned, which was the only novelty in the case, was held mere double use of revolving dining tables and bottle casters.

The application of a well-known form of blade, used in the old hand tool for trimming sole edges, to a metal milling cutter, also old and well known, for the purpose of producing a rotary cutter for trimming sole edges, was held mere double use in Busell Trimmer Co. *vs.* Stevens, 53 O. G., 2044; Supreme Court.

A patent for an improvement in a telegraph key was held to cover the mere double use of that improvement in a sounder just as surely as though the word "sounder" had been used in the claim. Western Electric Co. *vs.* LaRue, 55 O. G., 571; Supreme Court case.

In Ansonia Brass and Copper Co. *vs.* Electrical Supply Co., Supreme Court, 58 O. G., 1692, the use of paint in connection with braided coverings as an insulation for electric wires intended to carry a moderately large current, such as that used in lighting, was regarded as anticipated by the use of paint in insulation coverings for wires intended to carry a small current, as in burglar alarm circuits. It was well known that paint of the constituents used in each case was practically non-combustible, and this quality was valuable as a preventive of fire in the large current conductors but unnecessary in the smaller ones. The court held that the large conductors involved

mere double use of the small conductors even though the new result, non-combustibility, had not before been contemplated.

In Browning *vs.* Colorado Telephone Co., 68 O. G., 1145, a Circuit Court of Appeals case, a terra cotta conduit for electric wires, divided into two sections by a longitudinal partition, was considered to be a double use merely of terra cotta building blocks so divided by one or more partitions.

The Circuit Court for the Western District of Pennsylvania in Taws and Hartman *vs.* Laughlins & Co., 73 O. G., 287, held that a ball joint between a tuyere and tuyere pipe was *not* mere double use of a ball joint between train pipes carrying air or steam. The court said: "Where the divergence between the uses of the two devices is so radically extreme, the conditions so radically different, and the difficulties so peculiar to the one that the adaptation of what was useful in one sphere to use in another would possibly require more inventive faculty than the creation of something novel in itself, the new adaptation is not double use."

NEW USE OF OLD COMPOSITION OF MATTER.

A new use of a known composition of matter is generally mere double use, but it *may* constitute invention. As stated by Curtis in his Law of Patents, "When the new use of a thing produces an improved effect never before produced, or develops or makes practical some new property of matter not previously known, the new use is not analogous to the former uses, and therefore the novelty of the mere agent is immaterial." The English case, Muntz *vs.* Foster, 2 Webster's Patent Cases, 96, will illustrate. The patentee had discovered that an alloy of zinc and copper in the proportions of 1½ to 1 when used as sheathing for ships would, as the patent expressed it, render "the said sheathing less liable to oxidation, and consequently more durable, than the ordinary copper sheathing now in use, though at the same time it oxidates sufficiently to keep the bottom of the vessel clean." The proofs showed a prior manufacture for sale of sheets of this alloy in the same proportions. But the patent was held valid nevertheless

upon the ground that the patentee had discovered a new property of the alloy which made it of value in the particular use which he claimed for it.

The mere double use of an old mechanical instrument with new material is not invention. See Hotchkiss *vs.* Greenwood, 11 Howard, 248, where the patent covered merely the substitution of potter's clay or any kind of porcelain as the material for making door knobs, which were attached to a spindle or shank in an old way. "Superiority of material can not of itself be the subject of a patent. The superiority must extend beyond mere comparative cheapness or durability, or adaptation to the purpose for which the old material was used, and must lead to some change in the construction or mode of operation."

October 12, 1916.

Composition of Matter.

By
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One of the four classes of inventions named in the Statutes as the subject of patent protection is Composition of Matter. There is no restriction in this country as to the nature of the compositions which may be patented except that they must be new, useful and the result of invention.

Many other countries have restrictions as to the compositions which may be patented. The principal substances which are refused patent protection by them are foods, beverages, medicines or pharmaceutical preparations and the product of a chemical process. Austria, Germany, Japan, Russia and Switzerland will not grant patents on foods, medicines or chemical products though processes of making them may be patented except in Switzerland and as to medicines, in Austria. Denmark will not patent medicines or articles of food or processes of making articles of food. Sweden will grant patents on processes of making foods or medicines, but not on the product. France, Italy, Spain, Peru and Venezuela refuse patents on medicines and pharmaceutical preparations of all kinds. Portugal will not patent chemical or pharmaceutical products. Great Britain and her colonies grant patents on all the classes of compositions that are patentable in this country.

No good reason is seen why a meritorious foodstuff or chemical product should not be given patent protection, but it seems proper that medicinal preparations should be denied this protection on the ground of public policy, for the reason that the granting of patents upon such mixtures enables unscrupulous makers of such compositions to impose upon the credulous and ignorant by representing that the medicine has been endorsed by

the Government as is evidenced by the fact that a patent has been granted upon it.

Robinson defines a composition of matter as being "an instrument formed by the intermixture of two or more ingredients and possessing properties which belong to none of these ingredients in their separate state." Lane *vs.* Levi, 104 O. G., defines a patentable composition of matter as one that is produced by the intermixture of two or more specific ingredients and possessing properties pertaining to none of those ingredients separately, thereby accomplishing a new and useful result. These definitions are not to be construed as meaning that the product must have no properties in common with its ingredients but that the intermixture must develop a property or one or more properties which the ingredients individually do not possess. Lane *vs.* Levi is not quite accurate in stating that a new result must be accomplished. The result may be old if the means is new.

According to Walker the phrase " 'Composition of Matter,' as used in the Statutes, covers all compositions of two or more substances. It includes, therefore, all composite articles, whether they be the result of chemical union or of mechanical mixture and whether they be fluids, powders or solids. To be the subject of a patent a composition of matter must . . . be able to endure the relevant tests of invention, novelty and utility."

Chemical compounds will be considered as coming under compositions of matter in this paper, though they are very often referred to as articles of manufacture in the patents. The fact that in chemical compounds the component elements will combine only according to certain definite laws as to proportion, which is not true of non-chemical compositions, is no good reason for excluding them. They certainly are not simple substances and they meet the definition and tests of a composition as laid down by Robinson and the courts.

The intermixture of the ingredients in making a composition may be by mechanical or chemical operations or a combination of both. The result of the operation may be a mixture which can be separated into its constituent ingredients by purely mechanical means. Thus a mixture of iron filings and sulphur is an example of a

composition in which the iron and sulphur may be detected in the mixture with a microscope and the iron may be removed from the sulphur by means of a magnet. Or if some or all of the ingredients have chemically combined, the new substance resulting can be analyzed only by the joint use of mechanical and chemical means or only by chemical means depending upon the extent of the chemical combination between the ingredients. For example, if the iron filings and sulphur be mixed in the proportion of seven iron and four sulphur and heated, the ingredients will react and the compound iron sulphide will result whose properties are entirely different from its elements and whose constituent elements can not be detected by mechanical means but only by chemical analysis. The properties of the new product may be novel, never before having been possessed by any substance, or they may be old in themselves but new as to that particular association of ingredients and amount to an old result produced by a new means.

In chemical compositions the ingredients, while capable of independent existence, so far lose their identity and individuality when combined as to be no longer capable of being distinguished in the combination. Their mode of operation to produce the composition is also undiscernible. This may be true also in some compositions which are not composed of chemically combined ingredients. Opposed to this class of compositions are those in which the individuality of the ingredients is not wholly obscured and the method by which each ingredient performs its office in the combination is discernible. Between these two extreme classes there are compositions in which the individuality and mode of operation of some of the ingredients may be discernible while that of others may not be. In some compositions it is very difficult to determine whether ingredients have combined chemically or whether they are merely mechanically associated.

Alloys perhaps furnish the simplest and best example of the various kinds of compositions since they may vary all the way from true chemical compounds through mixtures of chemically combined metals with solutions of one metal in another in varying proportions, solutions

of metals in each other, mixtures of metals and solutions of metals, to mechanical mixtures of metals. Thus tin and copper will alloy in all proportions, but certain definite proportions of them form alloys having the characteristics of true chemical compounds. Other alloys of them apparently are solutions of one in another, also containing some of the true chemically combined metal. Lead and copper on the other hand will not combine with or dissolve in each other and their alloys are mechanical mixtures and difficult to make homogeneous owing to the tendency of the lead to segregate to the bottom of the ingot on cooling. Also the lead can be separated from the copper by heating to above the melting point of lead but lower than that of copper. Copper and tin can not be thus separated.

The invention in a composition of matter "is a substance possessing certain properties and formed by uniting certain other substances in a peculiar manner. Its identity depends upon the identity of its constituent elements, identity of their co-operative law and upon the identity of the properties exhibited in the composition as a whole. In this respect it resembles a true combination, and like other combinations its identity is lost by the removal or substantial change of any of its elements or by the introduction of a new ingredient which calls into activity some elemental force hitherto absent or inoperative, or by the union of its present elements under a new co-operative law." (Robinson Article 301.) In support of the above Robinson cites decisions to the effect that where one composition of matter contains ingredients not present nor represented by equivalents in the other the two are essentially different. But that the absence of an immaterial ingredient from one which is included in the other does not make the two distinct. That though substances contained in two compositions may be different in themselves, yet if they serve the same purpose the compositions may be patentably the same. That a composition composed of certain ingredients of a certain quality intermixed in a specified manner and possessing certain properties is not identical with a composition formed of the same ingredients without reference to quality or mode of intermixture and possessing different properties.

The fact that a composition contains an ingredient not contained in another does not necessarily mean that it is not an infringement of the second if the new ingredient does not change the essential properties of the composition. "There may be infringements of a combination patent by adding an element or an ingredient to obtain the same result or substantially the same, but not by leaving out an ingredient or an element of the combination and not substituting an equivalent." Standard Paint Co. *vs.* Bird, 175 F. R., 346.

A composition of matter though regarded as a combination is governed by rules peculiar to itself. Elements of a mechanical combination are identical or equivalents only when in their individual character they are the same operative means, not merely furnishing to the combination the same subordinate function but performing this by the same mode of operation. In the mechanical combinations the individuality of the constituent parts is not obscured and the mode of operation of each part is discernible. The identity of such a combination is determined by the identity of the individual parts of which it is made up, the identity of the way in which the parts co-operate and the identity of the resultant qualities inhering in the combination as a whole. In a composition of matter such a test is not always possible. In some mechanical compositions in which the identity and individuality of the ingredients is not wholly obscured the method in which each ingredient performs its part in the combination is discernible. In such a composition the tests of identity are the same as in other mechanical combinations, not only the means must be identical but the manner in which it co-operates with the other elements must be the same. A good example of a composition in which the mode of operation of the ingredients is discernible is one from the very active art of mixtures for automatically closing punctures in pneumatic tires, called "tire healers." A typical composition of this kind consists of asbestos fibre, whiting, flour, glucose, water and salt. In such a composition the office of the asbestos fibre is to form a network of fibres in the puncture when forced into it by the escaping air. This network traps and holds the fine particles of

whiting, which are insoluble and also the finer particles of flour thus closing up the openings in the fibre mass. The flour and water and the glucose form a glutinous vehicle for the asbestos and whiting. The salt acts both as a preservative and to lower the freezing point of the mixture. In such a mixture cotton or wood fibre will be the equivalent of asbestos, magnesia, cement, silica, and finely divided insoluble solids generally the equivalent of whiting, starch will be the equivalent of flour and alcohol will be the equivalent of salt.

In other mechanical and in all chemical compositions however, the individuality of the ingredients is lost and though it may be known that each ingredient affects the properties of the compound, the operative law by which it produces its effect may be entirely undiscernible. In such cases the rule that elements are to be regarded as the same only when they serve the same purpcse in the combination and operate in the same way to effect this purpose, is both useless and unreasonable. To quote frcm Robinson:

> "The law requires no further certainty than science can afford, and when no evidence of the identity of two ingredients can be obtained except that they perform the same function in the composition, this evidence is accepted as sufficient and the ingredients are held to be the same. The doctrine of equivalents in reference to compositions of matter thus differs according to the nature of the composition and the state of the scientific knowledge. In compositions where the mode in which the indivdual ingredients furnish to the composition the required elemental force is ascertainable, equivalence is determined by the rule that governs other combinations; otherwise the rule follows that applied to simple arts and instruments and all ingredients are equivalents which at the date of the patent were known as possessing properties that in the given composition make them interchangeable."

The limitation of equivalents to substances known at the date of the patent is not according to the later de-

cisions. In addition to known substances the judge stated in Read, Haliday & Sons *vs.* Schuelze-Berge, 78 F. R., 493, that:

> "In the light of the later decisions on the subject I think the law must be that where the new ingredient is such as would have been known to or employed by the ordinary skilled practical chemist or is such as would naturally have developed in the growth of the art, and the substitution thereof involves no alteration or new operation or result, it is covered by the patent provided the specifications and claims are sufficiently broad to include it. If, on the other hand, the development of the new ingredient required the exercise of the creative or inventive faculty, and certainly if its introduction causes some novelty in function or result, it would not be an equivalent."

In Bridgeport Wood Finish Co. *vs.* Hooper, 20 O. G., 156, it was held that:

> "In a wood filler composition silicious marl is not the equivalent of pulverized quartz inasmuch as, though they both consist of oxide of silicon, they are physically and practically different for the purpose of wood filling because the former consists of rounded water worn grains while the powdered quartz consists of angular sharp-edged fragments."

This is an example of a case where the mode in which the ingredients act is ascertainable. In Hoskins Manufacturing Co. *vs.* General Electric Co., F. R., 212, 422, a resistance element composed of an alloy of nickel 65 per cent, chromium 12 per cent, iron 15 per cent, and manganese 8 per cent, was held to be an infringement of a resistance element composed of alloy of nickel and chromium upon the theory that the addition of the iron and manganese did not materially change the alloy as a resistance element and therefore was considered to be the same as the latter. In other words, chromium, iron and manganese were held to be the equivalent of chromium in so far as the properties of the alloy when used

for resistance elements are concerned. The iron and manganese changed the alloy as to other properties, however, and considered as compositions of matter the nickel-chromium-iron-manganese alloy is not the same composition of matter as the alloy of nickel and chromium and it is not understood that the court so held. The question before the court related to an article of manufacture, a resistance element, rather than the question of whether the alloy itself, aside from any special application of it, was infringed. The alloy *per se* clearly was not infringed and if it had been used by the defendants, not for making resistance elements, but for making cutting instruments, for example, for which it is adapted, there is no doubt whatever in my mind that the court would have ruled that there was no infringement of the patent. In a case recently decided by Judge Hough, not yet reported (Friebacher *vs.* Roessler & Hasslacher Chemical Co.), it was held that a pyrophoric alloy composed of cerium and magnesium and treated with hydrogen infringed a claim reading "A pyrophoric alloy containing cerium alloyed with iron substantially as and for the purpose specified." This was held to be a pioneer invention and the manganese and hydrogen were held to be the equivalents of iron. Apparently the court has held in this case that *any* metal which when alloyed with cerium will produce a pyrophoric alloy, is an equivalent of iron. The last two cases cited are examples of equivalency being determined by result in the final product where the mode in which the elements operate to produce the result is undiscernible.

The same diversity of rule obtains in determining the identity of the co-operative laws of ingredients as in determining identity of ingredients. If the mode of action of the ingredients is discernible, then the co-operative law is perceptible and should be considered in determining identity of compositions. But if the identity of the ingredients is lost and their mode of action to produce their effects in the composition can not be determined, nothing is then known as to their co-operative law, and it must be regarded as the same in every grouping of the same ingredients which produces the same result.

Briefly, then, the logical way of comparing two compositions to see whether they are patentably the same is to compare first their characteristic properties. If these are different the two compositions are, of course, different, but if they are the same then the identity of the constituent elements must be considered. When the character of the composition is such that the mode of action of each ingredient is discernible, then the elements of each are identical only when their mode of action and effect are both the same. But in compositions in which the mode of action of the ingredients is not discernible the elements are considered to be identical if known as being interchangeable without affecting the essential properties of the complete composition. If the ingredients and the properties of the final composition are the same it is safe to assume that the compositions are identical without inquiring into the nature of the reactions between the ingredients, though Robinson states that differences in mode of mixing, or proportions of the same ingredients, or different reactions though producing the same result may possibly produce patentably different compositions though it is improbable. He cites no specific example of two such compositions, and his contention appears to be more hypothetical than practical. Robinson here is inconsistent with the statement he makes in Article 197 "that the artificial combination of ingredients into a substance which exists in nature is simply a new process for the production of that substance, not the creation of a new substance, and in such cases the process and not the substance is the patentable invention." It is improbable that the method followed by man in making the substance is precisely that by which it was formed in nature.

In its essentials a specification of a composition case does not differ from that of any other class of invention. Rule 35 states that the specification must set forth the precise invention for which a patent is solicited and explain the principle thereof and the best mode in which applicant has contemplated applying that principle in such manner as to distinguish it from other inventions. A composition presents three essential subjects for description, the ingredients, the manner of combining them

and the properties and nature of the resulting product. Each of the ingredients should be described in such manner that those skilled in the art may know exactly what is meant to be included. A great many applications that come before me are defective in this particular, owing to the use of indefinite and inaccurate terms in defining ingredients. This results in many cases from the loose use of chemical terms, such, for example, as using the word "soda" when referring to a salt or compound of sodium other than sodium carbonate, and it is difficult or impossible to tell from the context what particular compound is meant. When chemical substances are referred to the safest rule is to designate them by their correct chemical names instead of their old or colloquial names. If thus defined or designated, or the formula stated no question can thereafter arise as to what is meant. If a term has a definite accepted meaning in an art, though not strictly accurate, that is sufficient, since all that is required is that the substance be defined so that there is no question as to what is meant. Loose, indefinite terms are quite frequent in applications for paint compositions in such terms as "varnish," "drier," "Japan," etc., and in alloy cases in such terms as "brass," "bronze," "white metal," to designate ingredients. When it is taken into consideration that there are many kinds of varnishes, Japans, and driers and of brasses, bronzes, and white metals, differing in composition and many of them in a great degree, it is seen that such terms do not meet the requirement of the rules as to definite disclosure. It would be possible to make up a composition having the ingredients named in such a description and in the same proportions, and yet the resulting composition would differ materially from that which the applicant had in mind, because his varnish, Japan or drier, or his brass, bronze or white metal was different from the ones used by the other. Such a description is bad also because it does not disclose the invention sufficiently to enable the Examiner to make intelligent search on the case, since there may be a reference containing all the primary ingredients of the composition of the application, defined by their proper names without any statement as to whether some of them when mixed

will form a varnish, for example, and yet it could not be known that it was a reference because the specification as drawn did not indicate the composition of the particular varnish, which applicant was using and had in mind. In the absence of precise information the best the Examiner can do is to consider that any substance known under the names referred to comes within the scope of the invention and act accordingly. The proper way to specify the real ingredients in the case using brass, for example, is to state the composition of the brass, or to indicate how much copper and zinc are added in the form of a brass.

As another example I have a case pending before me now in which one of the ingredients is "Terra Alba." Terra Alba by one authority is a fine white clay known as pipe clay, by another authority it is defined as finely pulverized gypsum. These are two quite different substances and I do not know and can not tell from the case which one the applicant means. Such a description is defective.

Another frequent source of trouble is the use of trade names of products, the composition of which is not known and which may be secret preparations. Thus "Three-in-One" oil is a secret preparation and it is impossible for the Examiner to determine whether a composition is novel or not in which this is included as an ingredient. There is another objection to the designation of ingredients by trade names. One of the reasons why inventors are given the exclusive right to make, use and sell the product of their inventive skill is the benefit that accrues to the public by the publication of the invention. In order to fulfill this obligation in return for his patent the patentee must fully disclose the invention to the public. The designation of ingredients by trade names, the composition of the ingredient being unknown or indefinite, does not necessarily comply with this obligation, since the manufacturers may cease to manufacture it, or vary its composition and yet continue to sell it under the same name. These changes may be such that the substance will no longer perform the same function in the composition as did the substance of the same name used by the inventor when he made his

ingredients be known or stated in the description, though if it is known it is preferable to state it.

> "Where the specification of a patent covering a process involving the use of chemical elements or compounds defines the ingredients so that there can be no mistake as to what the patentee means, and has indicated a process which will transform those ingredients into that which is declared to be invention, it makes not a particle of difference that he was wholly ignorant of all the chemical changes that took place in the course of the process." National Enameling Co. *vs.* New England Enameling Co., 139 F. R., 643.
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> "When a patent contains sufficient disclosure of the claimed invention it will not be invalidated either by the failure of the patentee to state the causes which produce the result or by mistaken statement as to the reasons therefor." Hemalin Co. *vs.* Harvey Dyewood and Extract Manufacturing Co., 138 F. R., 54.

The nature of the resulting composition should be defined by a statement of its peculiar physical or chemical characteristics if possible.

Usually compositions are devised for some particular use, such as a paint, fertilizer, explosive, etc., and the use or uses to which they are intended to be put should be set forth in the description. In order to be patentable the composition must have utility. This may be assumed for some products such as new chemical compounds, but as to others the utility of the product should be specified.

The claims in composition cases often introduce questions which seldom or never arise in connection with the claims in machine and process cases, particularly the former. As a rule inventors devise or invent a specific composition to meet some definite want. The ingredients involved have to be mixed within certain limits or proportions or in a certain manner to get a composition which will have the desired properties. The description sets forth such a composition and too often says nothing about equivalents, whether or not proportions may be varied or whether or not some ingredient or ingredients

may be omitted without any material change in the resulting product. Claims are presented which merely enumerate the ingredients without any reference to proportions, or which omit some of the ingredients, or two or more claims are presented each of which contains an ingredient not included in the other. Thus if the composition contains ingredients a, b, c, d, e, one claim will be drawn to a, b, c, another to b, d, e, another to a, c, d, etc. Are such claims proper?

As to the omission of proportions, Walker states in Article 119 that the claim "should either expressly or by reference to the description specify the respective proportions which the different ingredients bear to each other." Judge Townsend in Panzl *vs.* Battle Island Paper Co., 138 F. R., 43, ruled as follows:

> "The first and second claims were drawn to cover a combination of substances old in the art, the patentability of which is asserted upon the theory that thereby a new result is produced. No proportions are given, however, and it would require experiment to determine what proportions are necessary to secure the result. These claims must be held invalid therefore, either because it does not appear that they disclose any invention in view of the prior art, or because they fail to acquaint those skilled in the art with the necessary information to enable them to practice the invention without experiment."

Walker and Judge Townsend both relied upon Tyler *vs.* Boston as authority for their statements. This decision, however, does not relate to *claims*, but has reference to the *description*. The real reason why such a claim is bad is because it is too broad and is beyond the scope of the invention, proportions being essential. The person who has discovered that certain ingredients mixed in certain proportions will produce a certain composition of matter has not discovered every composition of matter which may be made from those ingredients nor is he entitled to the broadest possible claim for a composition containing those ingredients though the contention is constantly being made in the prosecution of

cases that he is. As well say that an inventor of a machine containing certain mechanical elemental parts arranged in a certain relation is entitled to a claim which will cover every possible arrangement of those mechanical elements. An inventor is entitled to the broadest possible claim within the scope of *his invention* and no broader.

While the rule stated by Walker is not supported by the authority he cites it is nevertheless a good rule that in claims for compositions of matter in which proportions are essential the proportions should be specified either directly or by reference to the specification, or the identifying and distinguishing characteristics of the composition should be stated in lieu of proportions. The latter is the better practice, though requiring more skill and care in drafting the claim, because it more fully protects the real invention. It is possible that other combinations of the ingredients or their equivalents may produce a composition having substantially the same properties.

Claims omitting ingredients which the specification does not state may be omitted are without basis in the case since they are not for the applicant's invention. Identity is lost by omission of an essential ingredient. Robinson, 302; Walker, 369. This is a very common fault with composition claims. The omission of an essential ingredient makes a new composition. In a machine case whether an element is essential or not can be told by inspection. This, as a rule, is not so in composition cases, but only by experiment can the essentiality of ingredients be determined. Therefore in the absence of a statement that it is not essential an element is considered essential unless it is obvious that it may be omitted, for example, one which is added for merely fanciful effect, such as a coloring or a flavoring ingredient. If an ingredient merely improves the composition and is not absolutely essential, claims may be drawn both including and omitting it. *Ex parte* Hentz, 26 O. G., 437. But even in such a case a proper basis for the omission of such an ingredient should be laid in the description.

If the specification lays a basis for the omission of certain ingredients the claims which do not include all

the ingredients should be so worded as not to limit them to the ingredients enumerated therein. The phrases "consisting of" and "composed of" are limiting in effect while "containing" or "comprising" are broader terms. Hoskins Manufacturing Co. *vs.* General Electric Co. A claim for a composition "consisting of" a, b, c, and d, is a different invention from one for a composition "consisting of" a, b, and c. *Ex parte* Gleason, 108 Commissioner's MSS., Dec., 311. There is no analogy between compositions and machines in this respect. In a machine case claims may be drawn to the complete machine and to subcombinations of it. But the subcombinations do not lose their identity whether associated with other elements to form the machine or considered by themselves. A single reference can anticipate all of them since it is not necessary to show the subcombination by itself to anticipate it. In the case of the composition the ingredients may entirely lose their identity and their mode of operation is seldom discernible and a single reference will not meet a composition "composed of" a, b, c, and d and one "composed of" a, b, and c. Such claims are limited to the precise ingredients mentioned in each, no more and no less. They do not stand in the relation of genus and species to each other nor as combination and subcombination. If the word "comprise" be substituted for "composed of" in the claim containing a, b, and c, it may be considered as generic to the other since it is not now limited to a, b, and c, but may contain other ingredients; but even then essential ingredients should not be omitted. Objection has been made to this type of claim on the ground of indefiniteness (*Ex parte* Gleason, cited above), but it is no more indefinite than machine claims in which analogous expressions are used, and if the nature of the composition is also indicated in the claim by properties there can surely be no serious objection to this type of claim.

As to claims each of which contains ingredients not named in the others the Board of Examiners-in-Chief has held such claims to cover different species in *Ex parte* Inskeep, vol. 77, page 169 (Patent 806,976). The claims were as follows:

> (1) "Fumigating composition containing sulphur and hickory bark."

(2) "Fumigating composition containing sulphur and licorice."

(3) "Fumigating composition containing sulphur and lemon peel."

The complete compound contained all the above ingredients. The board said:

> "We are aware of no decision which authorizes the retention in the same application of claims which respectively include one element of a composition of matter associated with other and independent elements of that composition and we apprehend that no decision will ever be rendered authorizing such a practice; in fact, the decision in the case of *Ex parte* Eagle, which has never been overruled, distinctly forbids it. The fact that each claim can be read upon the complete mixture is not conclusive."

Almost invariably in cases of this kind which have come to my attention there has been no basis in the description for this type of claim and the inventor never had in mind the idea of juggling the ingredients of his composition in the manner covered by the claims. It would be a very unusual combination in which the various elements may be indiscriminately omitted without changing the invention. In such a composition many of the ingredients must be non-essential and instead of the complete mixture being a combination it is very likely an aggregation of substances.

The real test, however, in all the above types of claims is, Do the various claims cover a single invention? This must be determined for each case. If they do they should be permitted together. If they do not they should not be permitted together. The form of the claim is a secondary matter.

In selecting terms to define ingredients of a composition generically there is danger of choosing terms which are too comprehensive. In Bracewell *vs.* Passaic Print Works, 107 F. R., 467, the use of zinc oxide, hydrate, or carbonate seemed to be imperative to the success of the process. The applicant, however, stated that any zinc

compound may be employed with good results, which statement was incorrect since it was proved that a large number of them would not do so. Judge Coxe said:

> "It can not be contended that the patentee knew that his statement that any zinc compound would operate successfully was false, but it is manifest that he did not know that it was true and he should have known it was true before he inserted it in his description and made his corresponding claim. He stretched his net to catch as infringers all users of zinc compounds and if he stretched it to the breaking point he has only himself to blame. The courts should be liberal in construing patents, but they can not rewrite the description and claims, they can not construct an entirely new patent even to save a meritorious invention. If the complainant's contention be correct a patentee can claim blindly an entire group of compounds, relying on the court, after subsequent investigation and experiment, to limit the claim to the one which gives the best results. This will not do."

In Matheson *vs.* Campbell, 79 O. G., 686, it was alleged by the patentees that any sulpho-acid treated by their process would give a "color-producing black" and that therefore all sulpho-acids were equivalents. Judge Lacombe ruled that:

> "The inventors did not make any such 'broad discovery.' They made the specific discovery that some disulfo-acids treated according to their process would produce their product. The broad discovery that all sulfo-acids may be thus transformed they certainly did not discover . . . since most of them can not be thus transformed by the process of the patent. . . . We are referred to no authority and know of no principle which will sustain applicant's contention that he can thus . . . speculate on the equivalents of his claimed invention, and thereby oblige the public to resort to experiments in order to determine the scope of the claims of the patent."

But in *In re* Ellis, 167 O. G., 203, the court held that:

> "A term broad enough to cover substances not contemplated by the inventor is not objectionable where fifteen or twenty substances were named in the specification as suitable and it does not appear that there is any other term which is accurately generic to those named."

In defining ingredients generically, by statement of characteristics common to the several specific substances intended to be included, the characteristics or properties relied upon should be essential ones and not mere incidental ones which may be had in common by the substances but which are immaterial in so far as the particular composition is concerned. For example, in a non-corrodible alloy in which gold, platinum and iridium may be used interchangeably on account of their resistance to oxidation, and their specific gravity is unimportant, to define them in the claim as "heavy metals" is improper, since, while they *are* heavy metals, it is not this property which makes them equivalent in the alloy. Such a claim does not properly protect the invention since some heavy metals readily oxidize, and the claim would not cover alloys in which difficulty oxidizable metals not of high specific gravity are used. This is a fault which is quite common in drawing generic claims in composition and process cases. It is very seldom met with in mechanical cases because the function of the elements there is more evident and the common property which is utilized more readily appreciated. Essential, not non-essential, properties should be specified in identifying the ingredients.

There is very often difficulty in defining generically a number of substances which it is found produce substantially the same result in the composition, due to the lack of a generic term, none ever have been coined to fit the case; or it may be that investigation has not been carried to the extent of finding the common essential property of the interchangeable substances. In the latter case there may be a question as to whether the inventor has yet made the generic invention or discovery, or has merely made a number of specific inventions. In some

such cases applicants have been permitted to define the invention by the use of alternative expressions by specifying the various interchangeable substances in the claims. No objection is seen to this in cases where the substances are equivalents since the claim is construed to cover equivalents anyhow. But in cases where the substances are not equivalent, but relate to different species, the use of alternatives is at best a makeshift, since such a claim is not a true generic claim, covering an unlimited number of substances having a common essential property, but is what might be termed an "omnibus" claim, covering a definite number of designated species.

It is often hard to define a composition except by reference to the process of making it. Apparently, if a substance is different from another substance the particulars in which it is different can be pointed out. Otherwise, how is it known that it is different? However, claims have been sanctioned in cases where the differences though recognized are difficult to define. "A composition of matter may be described as a result of a described process where there is no clear way of delineating it." Analin *vs.* Higgins, 15 Blachford. Also Goodyear *vs.* Railroad, 1 Fisher, 626, and *Ex parte* Painter, C. D., 1891. In such cases though nothing can be held to infringe the substance, however closely it resembles it, unless it can be shown that it is made by the same process. Cochran *vs.* Badische Analin Soda Fabrik, 111 U. S., 310, and Plummer *vs.* Sargent, 120 U. S., 448.

Another quite common form of claim presented in composition cases is that in which attempt is made to define the product by stating that it is composed of the materials which are mixed together in making it. This is somewhat analogous to defining by reference to the process but is not the same and is objectionable in all compositions wherein the starting substances lose their identity or react with each other upon being brought together to form new substances. Such a composition should be defined by stating its own inherent properties not those of the materials out of which it was manufactured, because they do not exist as such in the final product and in most cases it is impossible to tell by an examination

of the product what substances were combined to produce it. If it is impossible to thus define it it should be claimed by reference to the process of making it.

If novelty were the only question to be considered in the examination of compositions they would be comparatively easy cases to handle. But the questions of utility, whether they are aggregations or true combinations, whether their compounding involves more than expected skill of the artisan are continually coming up and they are perplexing questions. In mechanical cases the function of each part is apparent or can be easily determined since there are but few laws of action to consider. This is not so in composition cases. Sometimes most surprising results are obtained in combining two well-known substances and it is often impossible to foresee the result. For example, an alloy of 24 per cent nickel and 76 per cent iron has a higher co-efficient of expansion than either metal alone, but if the nickel be increased to about 36 per cent the resulting alloy, "Invar," has an almost negligible co-efficient of expansion, being less than one-twelfth that of either iron or nickel. Whether an ingredient is essential or merely added for the purpose of avoiding an old substance is not easy to determine. Some ingredients may be like the celebrated "soup stone" which it was said would produce an excellent soup if placed in water and meat vegetables and seasoning ingredients added and the mixture allowed to simmer several hours.

The question whether or not the new use of an old substance or composition entitles the inventor to a patent to the composition comes up very often. The composition *per se* is not repatentable because it has been put to a new use, but it is usually very hard to convince the applicant of this. A new name does not make the composition new. "The new use of a composition of matter is not a new composition of matter but a new process for effecting in the new object some desired result." Robinson, Article 270. "The plaintiffs can not because of the use to which they apply the composition claim that they are first and original inventors of the composition." U. S. and Foreign Salamander Felting Co. *vs.* Howe, 9 O. G., 1875.

Also attempt is often made to claim an old substance because it is made in a new way or from new starting materials. Here, again, the composition is not repatentable. In Cochran *vs.* Badische, cited above, it was held:

> "That while a new process of producing it (alizarine) was patentable the product itself could not be patented even if it was a product made artificially for the first time in contradistinction to being eliminated from the madder root. Calling it alizarine did not make it a new composition and patentable as such."

In England a composition first made commercially is patentable, although before known as a chemical curiosity. Cyk., 30-826. A purified substance which has existed in an impure state may be patentable. In Parke Davis *vs.* Mulford, 189 F. R., 95 (the adrenalin case), it was held that:

> "A substance extracted from animal tissue for medical use which is new practically and therapeutically may be patentable although it differs from previous preparations only in the degree of purity."

And in Kuehmsted *vs.* Farbenfabriken of Elberfeld Co., 179 F. R., 701 (the aspirin case), it was held that a product made for the first time in a sufficiently pure state to render it therapeutically available is patentable.

Compositions differ from mechanical inventions in that generaly they can be very readily briefed for search purposes by the card index system or on large sheets where there are a limited number of ingredients, as in alloys, which class has been well briefed. The other composition classes are either not briefed at all or only partially. To brief them properly requires care and takes time. A carelessly prepared brief is valueless since it can not be relied upon. The search of compositions extends much beyond the patented art and in some

classes is more in the technical periodicals and books than in the patents. The time it would take to brief the various composition arts would, in my opinion, be well expended and more than compensated by the time afterward saved in making searches. As to the determination of equivalency, operativeness and utility this would require, in order to be properly done, a well-equipped laboratory with facilities for making the proper tests. I know of no good reason why the Patent Office should not have such a laboratory.

OCTOBER 29, 1914.

ESTABLISHING NOVELTY BY AFFIDAVITS

A paper read September 21, 1916, before the Examining Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1916

Establishing Novelty by Affidavits.

By

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U. S. Patent Office.

It is provided in Rule 76 that, when an application is rejected on reference to an expired or unexpired domestic patent which shows or describes but does not claim the invention, or on reference to a foreign patent, or to a printed publication, or to facts within the personal knowledge of an employee of the Office, affidavits or depositions supporting or traversing these references or objections may be received. There are some other classes of cases in which affidavits may be received to establish novelty but this paper will be confined chiefly to the ones above mentioned.

When claims are rejected on facts within the knowledge of an employee of the office, if the applicant requests it, the employee must make an affidavit supporting the facts. The applicant may then submit affidavits to contradict, explain or antedate the facts recited in the affidavit of the employee. For example, the facts set up in the affidavit of the employee may not carry the anticipation back two years from the filing date of the application in which case applicant will be permitted, if he can do so, to overcome the anticipation by an affidavit similar to those which may be filed under Rule 75, thus establishing the novelty of his device.

The other three classes of references above referred to are domestic patents which show but do not claim the invention, foreign patents, and printed publications. These three classes of references are grouped together

and may be overcome by affidavits filed in accordance with the provisions of Rule 75.

Rule 75 provides that—

> "When an original or reissue application is rejected on reference to an expired or unexpired domestic patent which substantially shows or describes but does not claim the rejected invention, or on reference to a foreign patent or to a printed publication, and the applicant shall make oath to facts showing a completion of the invention in this country before the filing of the application on which the domestic patent issued, or before the date of the foreign patent, or before the date of the printed publication, and shall also make oath that he does not know and does not believe that the invention has been in public use or on sale in this country, or patented or described in a printed publication in this or any foreign country for more than two years prior to his application, and that he has never abandoned the invention, then the patent or publication cited shall not bar the grant of a patent to the applicant, unless the date of such patent or printed publication be more than two years prior to the date on which application was filed in this country."

Briefly, the affidavit must state *facts* which show that applicant had invented his device prior to the date of the reference. What is the meaning of the word *facts* as used in this rule? A statement of applicant's own conclusions drawn from the facts within his knowledge without revealing those facts can not be accepted because that would not comply with the terms of the rule. The facts are required in order that it may be ascertained whether applicant's conclusions are warranted.

Suppose a case in which the state of facts is, that applicant had, before the date of the reference, fully evolved in his own mind the device disclosed in the application complete in every detail, one element, then another and so on until he had finally and fully conceived the combination of all the elements together in the completed machine, but that he had never described this to

any one or made any model or drawings thereof, or any other manner of record. This may be a true statement of facts which would seem to comply with the terms of the rule in every detail but he should not be granted a patent. He has furnished no proof, that is, no corroborating evidence to support his own statements. In short, he has furnished no proof except his own unsupported statements of prior conception of the invention.

In the first decision rendered on this subject, *ex parte* Gasser, C. D., 1880, page 94, the general principles were laid down as follows:

> "The applicant, therefore, must state on oath facts showing either that a reduction to practice had been made before the filing of the application on which the patent was granted, or that the invention had been conceived before that time and by due diligence connected with a subsequent reduction to practice."

The general principle here stated has been quoted with approval in almost every decision on this subject since that time, so that this seems to be the well-established practice up to the present time. While this indicates clearly in general formula what is required, the application thereof to specific cases as they arise is not entirely unattended with difficulty.

It is the intention here to discuss some of the specific cases which may arise and to indicate what conclusions it is believed should be drawn therefrom. In order to bring out the practical problems as they may be presented in actual experience the decision in the case of *ex parte* Donovan, C. D., 1890, page 109, seems to have gone into considerable detail and the following quoted therefrom will serve our purpose:

> "In *ex parte* Hunter (C. D., 1889, 218; 49 O. G., 733) it was stated that the rulings in *ex parte* Gasser and *ex parte* Saunders still governed the practice of the Office. Not only does the Office apply the principles laid down in *ex parte* Gasser in cases where it is sought to overcome a reference by an antedating oath, but it is difficult to see how in proceedings even *quasi* judicial, any

other course is permissible or even possible. It is the tribunal, which is to be satisfied that the applicant made the invention prior to the filing date of the reference. The witness states evidential facts which, when assembled, enable the Office to determine, first, whether the invention referred to in the affidavit was the same as that shown and described by the applicant, and, second, whether it was complete within the meaning of the rule before the filing date of the patent cited as a reference. To permit an applicant to prevail upon his naked statement that he conceived the invention and disclosed it to others, without stating by what agency the disclosure was made and the details of which it consisted, is to transfer the seat of judgment and decision from the tribunal sitting in the case to the mind of the applicant—a transaction radically defective in principle and contrary to all judicial usage. If the applicant made sketches, he should so state, and produce and describe them; if the sketches were made and lost, and their contents are remembered, they should be reproduced and furnished in place of the originals. The same course should be pursued if the disclosure was by means of models. If neither sketches nor models are relied upon, but it is claimed that verbal disclosures, sufficiently clear to indicate definite conception of the invention, were made, the witness should state, as nearly as possible, the language used in imparting knowledge of the invention to others. By whatever means the applicant claims to have disclosed the invention he must so present those means to the examiner as to enable him to determine whether or not the invention was present in the disclosure. The mere naked statement of the applicant that he disclosed the invention is of no avail, either to constitute evidence of disclosure or to impart sufficiency to a statement of facts in themselves inadequate."

The inference from this decision is that in a case in which applicant has lost his sketches or models and their

contents are remembered he may present a transcript from his memory and that will be sufficient to overcome the reference. Of what more evidential value is it to furnish a mental reproduction of a drawing which one has made than to furnish a detailed mental reproduction of what was in one's mind, as in the case of the man who has made no record? Has the examiner any more evidence before him from the man who says I made a sketch and lost it, but here is a sketch of my recollection of what it was, than he has from the man who says I did not make a sketch at the time this device was worked out in my mind but here is a sketch of what I had in my mind at that time? Or, in the other case, when the affiant says, I stated in substance this description of my device to A, but he is now dead and I can not furnish his testimony or affidavit? The inference from the decision above quoted is that the examiner should say to the applicant in the one case, your story may be true but you have not made a record of it or told it to any one and therefore it can not be accepted as sufficient. Shall the examiner then say to the applicant in the other case, you admit that you have no evidence, but you say you have had and it is lost, or your witness is dead, and because you have been so unfortunate, you may have a patent on your own unsupported statement? It should be remembered that these affidavits are not specifically required by statute and the affiant stands in no danger of being prosecuted for perjury, this proceeding not being a judicial one. What would it avail a litigant to come before the court and say, I have had witnesses to corroborate my statements but they are now dead, therefore I hand you herewith my recollections of what they knew and could say if they were here.

It has frequently been said that Rule 75 is not statutory and should be abolished. If it is meant by this that the particular mode of proceedings therein prescribed is not statutory, it is true; and some other process for proving the same thing, that is, priority of invention and right to a patent under the statutes, may be substituted therefor. But, if it is meant that when applicant is confronted with a reference antedating his application less than two years he should not be permitted

any opportunity to show that he is entitled to a patent notwithstanding the reference, then the statement that the rule is not statutory seems to be erroneous.

Section 4886 of the Revised Statutes provides as follows:

> "Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceedings had, obtain a patent therefor."

Rule 75 constitutes the practice provided by the Patent Office for establishing certain rights which may accrue under the two-year clauses of this section of the statute. It appears that some adequate practice or process must be provided to carry out this section of the statute when conditions described in Rule 75 arise, because applicant may be able to appeal his case to the court and on a proper showing compel compliance with the statute and the grant of a patent.

In my view, the purpose underlying Rule 75 is not only proper but some such practice is necessary in order to carry out the provisions of the statute and give deserving inventors an opportunity to establish the novelty of their inventions by proper and convincing evidence. The great difficulty about the rule is that there is no opportunity to cross-examine the affiant and the case must rest on a *prima facie* showing.

The applicant who has competent evidence to offer, such as original sketches or drawings, or models, or depositions of others as to what he has disclosed to them, gives little difficulty, because he submits his proofs and would, probably, in a majority of cases, be only too glad

to submit to a cross-examination if opportunity were afforded. He should not be denied a patent because there is no provision in the practice for subjecting him to a rigid and searching inquiry. But the best of methods for securing justice may fail if they are not carefully and strictly enforced, and in these cases in which we can have no opportunity to search the mind of the affiant as to the accuracy of his statements it appears all the more important to require rigid compliance with the fundamentals prerequisite to a *prima facie* showing.

It is believed that excuses for not having corroborating evidence to substantiate an affidavit should never be accepted as sufficient. Such excuses, as the witnesses are dead or out of the jurisdiction and can not be found or the records are lost, but as I remember it here is what I could have proved, would not have the slightest standing in any court as a substitute for evidence. These excuses should only be accepted as a legitimate reason for introducing accurate and properly authenticated, that is, certified or clearly proven, copies of original records. For the examiner to accept these memory stories is to allow the applicant to establish his case by his own unsupported statements of what he has done.

While it might work a hardship to deprive one of a patent because he has been so unfortunate as to lose the evidence which would substantiate his case, it seems entirely unsafe for the Office to go beyond the pale of giving an applicant every opportunity to submit evidence to corroborate his statements. If any other course is followed it would appear to amount to nothing more than accepting an *ex parte* statement of conclusions of the applicant. To lower the standard of evidence to mere memory statements of the applicant is to open wide the door for fictions and fabrications.

It is true that a prima facie valid patent may be granted simply on a showing of facts. A preponderance of evidence, for example, is not required. It is not so much the quantity of evidence as the quality of it, that will constitute a prima facie showing sufficient to warrant the grant of a patent. The showing should be something that has evidential value in the sense of being corroborative of the statements contained in applicant's affidavit. It should be something independent of ap-

plicant's acts or statements during the time of the prosecution of his application, some record or disclosure he made, or some act he performed at the time alleged in his affidavit, which, if genuine or true, shows by its existence or occurrence the truth of his allegation.

It is submitted that the interests of the public and the inventors would be better served by requiring that an applicant to succeed under Rule 75 must furnish in addition to his own affidavit, corroborating evidence in the form of original drawings, sketches, models, or affidavits of other witnesses, or in other words, such competent and convincing evidence as would be admissible under the ordinary rules of evidence.

September 21, 1916.

Certain Phases of Reissues

Particularly
Delay in Filing the Application, and Inadvertence, Accident or Mistake

A paper read November 5, 1914, before the Examining Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1914.

BRIEF OF POINTS.

The first reissue statute was passed in 1832.

Prior to that time, reissues were granted, and they were upheld by the Supreme Court in Grant *vs.* Raymond.

Up to about 1882, the practice was extremely liberal, allowing a reissue of a patent practically at any time during its life, for anything which might have been claimed in the original, and sometimes even for more than was disclosed.

This resulted in great hardships to manufacturers.

To correct these evils the Supreme Court, in the case of Miller *vs.* Brass Co. (decided in 1882), laid down the doctrine of laches.

This doctrine was founded upon the theory that the statute did not in terms, provide for enlarged reissues. A change in the rules immediately followed requiring the applicant to file an oath setting forth what the errors were which constituted the inadvertence, accident, or mistake, and how they arose or occurred.

Where the claims are restricted delay may be disregarded, unless the delay occurred after the defect was discovered.

"Inadvertence, accident, or mistake," is used in antithesis to fraudulent intent, and comprehends every error by which the patent fails to give the protection which it should have given.

Claims may be broadened by reissue filed within two years, where there has been a clear error, which may consist merely of want of knowledge or attention, experience, or capacity on the part of the solicitor or the applicant.

After two years each case must be governed by its special facts and circumstances.

Certain Phases of Reissues, Particularly Delay in Filing the Application, and Inadvertence, Accident, or Mistake.

By
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REISSUES BEFORE THE FIRST REISSUE STATUTE.

In the foundation of our Government it was deemed conducive to the progress of its people that a monopoly for a limited time be granted to the inventors or discoverers of new and useful inventions. In conformity with the Constitutional provision the first patent statute was enacted in 1790 authorizing the Secretary of State, or the Secretary of War, or the Attorney-General, to cause letters patent to be made out in the name of the United States, it being required that such letters patent be attested by the President of the United States, and certified by the Attorney-General upon his finding that the grant had been made in conformity with the act.

It was obviously the purpose of the law to protect inventors for the actual invention disclosed, for clearly it would be a miscarriage of justice should the public be given the benefit of the inventor's disclosure without at the same time securing to him a monopoly of the invention for the period set out in the statute, which originally was fourteen years. But it sometimes happened that a patent, while disclosing the invention fully to the public, failed for some reason to protect the inventor in his exclusive rights. It was then a serious question how the rights of the inventor could be secured as there was at first no authority given in the statute to amend or correct an imperfect patent. Notwithstanding the failure of the statute to give any express authority in this regard patents were frequently reissued

with a view to giving to the inventor the protection which it was intended that the original patent should give. Reissues were at first granted by the Secretary of State. The right to reissue came before the Supreme Court for the first time in January, 1832, and the power to grant reissues was considered. The objection was raised that the Secretary of State was merely a ministerial officer and could exercise no power not expressly given. On this point, the court, speaking through Chief Justice Marshall, said:

> It is undoubtedly true, that the Secretary of State may be considered, in issuing patents, as a ministerial officer. If the prerequisites of the law be complied with, he can exercise no judgment on the question whether the patent shall be issued. It is equally true that the act of Congress contains no words which expressly authorize the secretary to issue a corrected patent, if the original, from some mistake or inadvertence in the patentee, should be found incompetent to secure the reward which the law intended to confer on him for his invention. The force of this objection, and of the argument founded on it is felt. If the new patent can be sustained, it must be on the general spirit and object of the law, not on its letter.

The opinion then points out that a law for the protection of inventors was one of the first passed by Congress, and that it was the purpose of that law to confer on them an exclusive right to their inventions for a definite period as a compensation for their exertions and the disclosure of the invention to the public. The law should be construed, the court said, so as—

> to execute the contract fairly on the part of the United States, where the full benefit has been actually received, if this can be done without transcending the intention of the statute, or countenancing acts which are fraudulent or may prove mischievous. The public yields nothing which it has not agreed to yield; it receives all which it has contracted to receive. The full

> benefit of the discovery, after its enjoyment by the discoverer for fourteen years, is preserved; and for his exclusive enjoyment of it during that time, the public faith is pledged. That sense of justice and of right which all feel, pleads strongly against depriving the inventor of the compensation thus solemnly promised, because he has committed an inadvertent or innocent mistake.
>
> If the mistake should be committed in the department of State, no one would say that it ought not to be corrected. All would admit that a new patent, correcting the eror, and which would secure to the patentee the benefits which the law intended to secure, ought to be issued. And yet the act does not in terms authorize a new patent, even in this case. Its emanation is not founded on the words of the law, but it is indispensably necessary to the faithful execution of the solemn promise made by the United States. Why should not the same step be taken for the same purpose, if the mistake has been innocently committed by the inventor himself? Grant *vs.* Raymond, 6 Peters, 218-240.

The decision held the reissue valid notwithstanding the absence of statutory authority to grant it.

STATUTORY PROVISIONS.

This decision was rendered in January, 1832. On July 3, 1832, the first resissue statute was enacted which provided "that whenever any patent which has been heretofore, or shall be hereafter, granted . . . shall be invalid or inoperative, by reason that any of the terms or conditions prescribed in the third section" of the act of 1793 "have not, by inadvertence, accident, or mistake, and without any fraudulent or deceptive intentions been complied with on the part of the said inventor, it shall be lawful for the Secretary of State, upon the surrender to him of such patent, to cause a new patent to be granted to the said inventor for the same invention for the residue of the period then unexpired." This act also gave the right of reissue to his assignees. In the law of 1836,

the provision for reissues is found in section 13, which provided that reissues should be granted whenever a patent was inoperative or invalid "by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification as his own invention, more than he had a right to claim as new, if the error has, or shall have arisen by inadvertency, accident or mistake, and without any fraudulent or deceptive intention." The portion of the act of 1836 quoted is in substantially the same words as section 4916, Rev. St.—the present reissue statute.

Although the statute as it stands today is essentially the same as the statute of 1836, the practice was considerably modified from time to time, changes being brought about by judicial interpretation. Let us look at the development of the practice and the reasons therefor.

PRACTICE UNDER THE STATUTE CHARACTERIZED BY GREAT LIBERALITY—CAUSES AND RESULTS.

Reissues were always granted for the purpose of securing to the inventor the real invention which he sought originally to protect, when the original patent failed to give adequate protection through some inadvertence, accident, or mistake, and without any fraudulent or deceptive intention. In the early practice all that was necessary to establish inoperativeness or invalidity, and inadvertence, accident, or mistake, and absence of fraudulent intent was the affidavit of the inventor or assignee to that general effect. It was not necessary to make any statement, under oath or otherwise, showing in what respect the original patent was defective, what the errors were, or how they arose or occurred. The first provision in the rules requiring the applicant for reissue to specify the defects in the original patent and the errors which occasioned them occurs in Rule 46 of the Rules of September 1, 1863, which provided that "all applications for reissue must be accompanied by a statement clearly setting forth in what respect the original specification is inoperative or invalid,

and what inadvertency, accident, or mistake occurred, that the office may have the means of determining whether it was without any fraudulent intent." This was omitted in the next edition of the Rules of January 1, 1865, and a similar provision was not made until 1882.

The demand for the restriction of reissue was widespread but the remedy was not obvious. In 1876, a prominent attorney of Philadelphia—Mr. Howson—suggested that every applicant for reissue be required to "file a paper setting forth in full and explicit terms wherein consists the error, inadvertence, or mistake contained in the oiginal patent which he desires to correct by reissue. If language is introduced which does not appear in the original patent, he must state why he introduced it, and whether it is based on the model, drawing, or specification. If new functions, which do not appear to have been contemplated in the original patent, are given in the new specification, a full explanation will be demanded from the applicant, tending to show the accuracies of the new assertions, and when expanded claims are asked, he must state the ground on which they are based." This suggestion however was not adopted.

Rule 86 of the Rules published September 1, 1880, provided that "the affidavit of the applicant will be prima facie evidence as to inadvertency, accident, mistake, fraud, and deceptive intent, subject to contradiction or confirmation by the records of the office, by the affidavit of employees of the office having personal knowledge of the facts, or by such other affidavits as the Commissioner shall, without disclosing the pendency of the application, admit as evidence in the case."

In the next edition of the Rules published April 15, 1882, a decided step was taken toward restricting reissues by requiring that the applicant set forth particularly the defects or insufficiencies in the specification which rendered the patent inoperative or invalid, that he explain how the errors arose in order that the question of inadvertence, accident, or mistake might be determined, and make oath that such errors arose without fraudulent intent. It was afterward required (Rules of

Practice, November 16, 1885), that all these allegations be made under oath. The practice in this respect is now covered by Rule 87 which was recently held valid by the Court of Appeals of the District of Columbia, in Fullagar, 192 O. G., 1263; 40 App. D. C., 510. The purpose of requiring a statement of the particular errors and how they arose or occurred was evidently to bring out on the record all the facts in order that the office could judge whether the alleged mistake was a *bona fide* mistake, or a deliberate act inconsistent with applicant's allegation. This requirement has an analogy in the requirement of Rule 75, that an affidavit filed thereunder shall state "facts" as distinguished from the conclusion of the affiant. In both cases, the purpose is to substitute the judgment of the officers who are charged with the duty to administer the law for the conclusion of another. Since 1885, the practice on this point has not materially changed.

From the facts stated it is apparent that the early requirements as to the showing of defects in the original claims and the mistakes which caused them were so easily complied with that, until 1882, they offered practically no obstacle to the reissue of any patent with either restricted or broadened claims.

Another matter which caused some difficulty in the development of the law involved the relation between the inventions covered by the original and reissued patents. It was always the purpose to restrict the invention covered by the reissue to the invention which the original patent was intended to protect. But views varied as to the right of the inventor to amend his specification, drawings, and model, or to add to the disclosure in the reissue application matter which the inventor intended to include in the original description, drawings, or model, but which he failed to include through some inadvertence. It was the established practice for many years to permit the inventor to include in the reissue anything which he might have included in the original. Hence he could amend the description by the drawings or the model, or the model and drawings each by the other, but he could not amend the model and drawings by the description except in a clear case, the description being considered as uncertain.

Rule 54, of the Rules of February 20, 1854, stated that "the general rule is, that whatever is really embraced in the original invention, and so described or shown that it might have been included in the original may be claimed in a reissue, but in case of machine, model and drawings must be amended each by the other; but when there is neither model nor drawings amendments may be made upon proof satisfactory to the Commissioner that such new matter was a part of the original invention and was omitted through inadvertence. The Rules of Practice of July 15, 1870, provided that "anything which might have been included in the original may be claimed in a reissue."

For a time prior to this it was the practice to permit the inclusion in a reissue of inventions not disclosed in the specification, drawings, or model on sufficient proof that such invention was a part of the original invention. This practice resulted from an extremely liberal interpretation of the statute to the effect that the inadvertence, accident, or mistake referred to inadvertence in a failure to disclose the invention rather than a failure to point out the invention so as to distinguish the old from what was claimed as new. It was soon decided however that this was illegal (Carhart *vs.* Austin, 2 Fisher, 543; Goodyear *vs.* Providence Rubber Co., 2 Fisher, 499; Sickles *vs.* Falls Co., 2 Fisher, 202), and that the reissue must be restricted to matter disclosed in the original patent. This dangerous tendency to claim even more than was disclosed in the original was definitely checked by the provision of Section 53 of the act of 1870, which provided that "no new matter shall be introduced into the specification, nor in case of a machine patent shall the model or drawings be amended, except each by the other." It is to be noted however, that the present reissue statute still permits the insertion of matter not originally included in cases where there is no drawings or model, upon proof satisfactory to the Commissioner that such new matter or amendment was a part of the original invention and was omitted from the specification by inadvertence, accident, or mistake."

Another reason for the early liberal practice on the granting of reissues was the fact that the doctrine of laches in the filing of the application had not yet been

evolved. No statute that has ever been passed relating to reissues has made diligence a condition precedent to the grant. The statute gave the right of reissue to one who had inadvertently failed to secure the protection to which he was entitled. It was assumed that it was the intention to secure to the inventor what he should have secured in taking out the original patent even though a correction of the error long after the publication of the patent, and the public use of the invention, might work some hardship on the public. Therefore it appears that the length of time intervening between the grant of the original patent and the filing of the reissue application was not considered. Reissues broadening a patent were granted but a short time before its expiration. An instance of the length to which the practice went is found in the decision of the Supreme Court in the case of Gage *vs.* Herring, 22 O. G., 2119; 107 U. S., 640, involving reissue patent, 4712. The original patent, if its term had not been extended, would have expired on April 20, 1872. In December, 1871, four months before the time of expiration, a reissue was applied for (this being the second reissue), adding a claim to the single prior claim, which broadened the scope of the patent by omitting from the new claim two of the seven elements before claimed. The oath simply averred that the petitioner "verily believes that, by reason of an insufficient and defective specification, his aforesaid letters patent (the first reissue) are inoperative or invalid; that the said error (no error was stated) had arisen from inadvertence, accident, or mistake, and without any fraudulent intention, to the best of his knowledge or belief." The reissue was granted in less than a month without objection or comment.

On account of the extreme liberality of the practice upon the identity of the invention, showing of inadvertence, accident, or mistake, and the time within which reissues might be granted, a reissue was resorted to very frequently. In 1863, the number of reissues granted was 6 per cent of the total; in 1870, it was 3½ per cent. Comparing these figures with a percentage of .24 for 1895, it is found that the percentage of reissues of 1863 bear to the reissues of 1895, the proportion of 25 to 1. Furthermore, the patents reissued

were those of most importance in the arts and industries. The evils resulting from this liberal policy were observed and commented upon, although it is due to the Patent Office to say that its policy was directed by the law and the decisions of the courts, and it could not materially restrict the right of reissue as it had always been recognized without assuming an arbitrary power.

On this point a prominent patent attorney in 1882 said:

> Although the Patent Office may, in some instances, be directly responsible for the grant of outrageous reissued patents, it would be unjust to charge that bureau with the evils resulting from the prevailing latitude in acting on this class of cases, and the permission given patentees to absorb by reissue, the inventions of others.
>
> Many expanded reissued patents of doubtful character have been sustained by the courts, while many others have been slaughtered.
>
> The treatment of reissued and expanded patents by the courts has not been uniform, and in the light of apparently conflicting judicial opinions, the office has been unable to draw a well-defined line for the guidance of Examiners in their consideration of reissue applications.
>
> The understanding and opinions of Examiners naturally enough differed on the subject, and the consequence of all this has been the long continuance of a system of so-called liberality in the grant of reissued patents with enlarged claims.

The Supreme Court graudually developed a strong antagonism to enlarged reissued patents.

In 1879, in the case of Leggett *vs.* Avery, 17 O. G., 445; 101 U. S., 256, commenting on a patent granted on October 9, 1860, surrendered and reissued on June 22, 1869, extended for seven years from October 9, 1874, and again reissued on November 10, 1874, it said:

> The pretense that the error had arisen by inadvertence, accident, or mistake, within the meaning of the patent law, was too bald for human credence. . . .
>
> The allowance of claims once formally abandoned by the applicant in order to get his patent

> through is the occasion of immense frauds against the public. It not unfrequently happens that after an application has been carefully examined and compared with previous inventions, and after the claims which such an examination renders admissible have been settled with the acquiescence of the applicant, he, or his assignee, when the investigation is forgotten and perhaps new officers have been appointed, comes back to the Patent Office, and under the pretense of inadvertence and mistake in the first specification gets inserted into a reissued patent all that had been previously rejected. In this manner, without an appeal, he gets the first decision of the office reversed, steals a march on the public, and on those who before opposed his pretensions (if, indeed, the latter have not been silenced by purchase), and procures a valuable monopoly to which he has not the slightest title.

General Leggett made the following comment:

> "In these reissues more deviltry—if I may be permitted to use the phrase—creeps into the practice of patent law, than everything else put together."

EVILS AND REMEDIES THEREFOR.

What were these evils which gave so much concern to the Patent Office and the courts?

Generally stated it was the withdrawal of rights which mechanics and manufacturers had exercised for years, not in favor of the real inventor or the one who had done most to advance the sciences and useful arts, but in favor of a mere speculator who had never done anything but conceive of a way in which an apparently worthless patent might be expanded into one of far-reaching importance. The practice which prevailed is quite fully set forth in a pamphlet written by Mr. H. Howson, of Philadelphia, published in 1877, when discussions relat-

ing to proposed patent legislation took place before the Senate Committee on Patents. He said:

> "A patent, or series of patents, relating to some special branch of industry, has been obtained, and capital has been invested in the manufacture of the patented articles. Now in these days, the simplest objects of every-day use can not be economically manufactured without an outlay for machinery and appliances, and for carrying into effect a proper system of division of labor; the public demands not only new things but better things and cheaper things, and this demand can only be supplied by patents, and by the capital which patents invite. The remarkably cheap products of our workshops at the Centennial Exhibition were matters of surprise and astonishment to our visitors from abroad, where labor is much less expensive than in our own country.
>
> "The factory, based on patents, is in full and successful operation, the proprietor is receiving a fair interest for the capital invested, and the public has the benefit of cheaper and better articles in return for the protection afforded by the Government in the shape of patents.
>
> "The success of the establishment can not remain a secret, and it attracts the attention of a patent speculator, whose first move is to try to get hold of some patent preceding those which are owned by the proprietors of the establishment. Failing in discovering a patent to exactly meet the case, he takes an excursion to Washington, probably takes the advice of a solicitor there, to whom he explains what he wants, and together they go on a hunting expedition through the records and model halls, until they find some model of a patent which they think can be doctored by reissue to resemble a subsequent prominent patent of the manufacturer. The model has, perhaps, long since been almost forgotten by the inventor himself, and has remained on the shelves of the model room without attracting any notice. By cunning manoeuvres,

the patent to which the model appertains is purchased from the owner, perhaps for a mere song, and then commences the operation of reissuing; the attorney has the copy of the recently discovered patent before him, and also a copy of that for the coveted machine of the successful manufacturer, and he is told that he must reissue the first patent so as to cover, or, to use a common phrase, wipe out the second.

"The most ingenious devices are adopted to bring this about,—the attorney receives high fees, and the Examiner is cajoled by all sorts of assertions into allowing claims which may appear to be innocent enough.

"The reissued patent is shown to the manufacturer, and he may be induced to purchase it for a large sume in order to avoid expensive litigation. Now this money is taken from the public to enrich the speculator, the non-producer, for, to make up for the withdrawal of capital, the price of the product is increased. Perhaps the manufacturer resists the demand made on him, costly litigation ensues, and the public and manufacturer suffer for the benefit of the owner of the reissued patent.

"The evil wrought by this system is incalculable; it not only disturbs the economy of manufacture, but brings disgrace on the whole patent system. A reissue of this character can not promote the progress of the useful arts, it must necessarily obstruct that progress."

There are scores of instances in which patents were issued, reissued, and re-reissued to keep pace with "the progress of the arts as developed by time and experience." In one instance, a patent was granted with a single, modest, and harmless claim; in the branch of industry to which it related, several valuable improvements were made, the patent was reissued to absorb these improvements, again reissued to cover other improvements, and again reissued, until at last, the little patent with a specification of 450 words and a single claim was

converted into two patents with 8,000 words and seventeen claims.

Remedies to correct these evils were suggested and attempted from time to time. Fomerly the owner of the entire interest in a patent could reissue it without the knowledge or assent of the inventor; but since the act of 1870, the inventor if alive, must make the application. This remedy however, had little effect as it was generally an easy matter, by misrepresentation or through the intervention of emissaries, to obtain the signature of the inventor, who was kept in the dark as to the scope and object of the reissue.

In his report of 1871, Commissioner Legget suggested that the law should be so amended as to require that a notice of all applications seeking enlarged claims be published in the Official Gazette, for at least four weeks previous to the day set for examining the same, and that opposition be allowed as in extension cases. It was also suggested that there should be no reissue of a patent after it had been in existence for more than two years.

THE DOCTRINE OF DELAY OR LACHES.

Without any change in the law, however, the Supreme Court found a remedy in the doctrine of laches in filing the application. This doctrine was laid down in the case of Miller *vs.* The Bridgeport Brass Co., reported in 104 U. S., 350; 21 O. G., 201. The decision is dated January 9, 1882. The facts in that case are briefly set forth in the decision as follows:

> "The original patent described a combination of devices, amongst other things, *two* domes or reflectors, one above the other, elevated above a perforated cap through which a wick tube and vapor tube ascended.
>
> "It was claimed that this combination of devices, especially including the two domes, which admitted the external air between them for producing a more perfect combustion, would make a lamp, which, *without a chimney*, and without danger of explosion, would burn those hydrocarbons which are volatile and contain an excess

of carbon. The invention proved a failure, but it was found that *the use of one of the domes* (and the other parts) *with the restoration of the chimney*, would be a real improvement, and both plaintiff *and defendant* made such lamps in large quantities. *Fifteen years after the original patent was granted*, the patentee (or rather his assignee) discovers that the improved lamp was really a part of his original invention, and that by inadvertence and mistake he had omitted to claim it.

"Upon this state of facts, the court said: 'We think, that the court below was clearly right in holding that the invention specified in the second claim of the reissued patent (the one in question) is *not* the same invention described and *claimed* in the original patent.' "

The court might have rested its decision on their conclusion that the reissued patent was not for the same invention as the original. Or they might have rested the decision on the finding of no inadvertency, accident, or mistake, for the opinion says:

"But there is another grave objection to the validity of the reissued patent in this case. It is manifest on the face of the patent when compared with the original, that the suggestion of inadvertence and mistake was a mere pretense."

But the court proceeds to say:

"Or if not a pretense, *the mistake was so obvious as to be instantly discoverable* on opening the letters patent, *and the right to have it corrected was abandoned and lost by unreasonable delay. The only mistake suggested is, that the claim was not as broad as it might have been.* THIS MISTAKE, IF IT WAS A MISTAKE, WAS APPARENT UPON THE FIRST INSPECTION OF THE PATENT, AND IF ANY CORRECTION WAS DESIRED, IT SHOULD HAVE BEEN APPLIED FOR IMMEDIATELY.

"These *afterthoughts, developed by the subsequent course of improvement*, and intended, by an ex-

pansion of claims, to sweep into one net all the appliances necessary to monopolize a profitable manufacture, are obnoxious to grave animadversion.

"If a patentee who has no corrections to suggest in his specification except to make his claim broader and more comprehensive, *uses due diligence in returning to the Patent Office*, and says, 'I omitted this,' or 'my solicitor did not understand that,' his application may be entertained, *and on a proper showing*, correction may be made.

"But it must be remembered that the claim of a specific device or combination, and an omission to claim other devices or combinations apparent on the face of the patent, ARE IN LAW A DEDICATION TO THE PUBLIC OF THAT WHICH IS NOT CLAIMED.

"*It is a declaration that that which is not claimed is either not the patentee's invention, or, if his, he dedicates it to the public.* This legal effect of the patent can not be revoked unless the patentee surrenders it and *proves* that the specification was framed by real inadvertence, accident, or mistake, without any fraudulent or deceptive intention on his part; *and this should be done with all due diligence and speed.* Any unnecessary laches or delay in a matter thus apparent on the record, affects the right to alter or reissue the patent for such causes. If two years' public enjoyment of an invention with the consent and allowance of the inventor, is evidence of abandonment, and a bar to an application for a patent, *a public disclaimer in the patent itself should be construed equally favorable to the public.* Nothing but a clear mistake, or inadvertence, and a speedy application for its correction, *is admissible where it is sought merely to enlarge the claim.*

"Now whilst, as before stated, we do not deny that a claim may be enlarged in a reissued patent, we are of opinion that this can only be done when an actual mistake occurred, not from a mere error of judgment (for that may be rectified

> by appeal); but a real, *bona fide* mistake inadvertently committed, *such as a Court of Chancery, in cases within its ordinary jurisdiction, would correct.* Reissues for the enlargement of claims should be the exception, and not the rule."

Here the Supreme Court, fifty years after its first consideration of a reissued patent and forty-six years after the enactment of the statute, gave a new force to its terms, and laid down a doctrine never before known to the patent law—that of delay and intervening rights.

FOUNDATION OF DOCTRINE OF LACHES.

The decision of the court in Miller *vs.* Brass Co., was intended to, and did, put a stop to the hardships placed upon manufacturers by the undue enlargement of patents many years after the invention covered thereby had gone into public use. Let us now look at the foundation of the doctrine as enunciated by the court. As shown by the decision itself the court found its authority for the doctrine in the general principles of the law, and in the equitable doctrine that laches may forfeit an existing right. The court reasoned in substance as follows:

That the law of 1832 provided for a reissue where there was a failure to comply with any of the terms and conditions prescribed by the law for giving a clear and exact description of the invention. That the law of 1836 enlarged the power to grant reissues by adding an additional ground for reissue, namely, that the patentee had inadvertently claimed more than he had a right to claim; that prior to this time no claim had been required to be made, and therefore that the enlargement of the claim was not in the mind of Congress when the statute was enacted; that the law in terms contemplated only a correction of the description and a restriction of the claim and not an enlargement of a restricted claim. They concluded that if the patentee was entitled to amend his patent when he had claimed too little it was only under the general terms of the law, and on principles of equity, and that in such case, equity would restrict the privilege so as to protect the public from

the evils to which it had been subjected by unwarranted reissues.

Robinson, in his work published eight years after the decision of the court, maintains that the reasoning of the court is founded upon a fundamental error in assuming that the word "specification" in the phrase "defective or insufficient description or specification" did not refer to the claims; that while prior to the law of 1836, no formal claim was required, nevertheless it had been customary to make a "claim" and this part was often referred to as the "specification" of the invention; that the statute therefore did in terms provide for the correction by reissue of an error by which the patentee failed to secure sufficient protection. The learned author contends that the statute might have been interpreted as providing for an enlargement of the claims and that the doctrine of laches might have been founded as well upon the theory that delay is inconsistent with the existence of inadvertence, accident, or mistake.

If we should regard delay merely as evidence bearing on the question of inadvertence, accident, or mistake, it would result probably in a more uniform application of the doctrine of laches; but that the courts have not adopted this viewpoint is believed to be evident from their decisions made since the publication of Robinson's work. If the doctrine of laches were brought within the statutory provisions it is not seen how any distinction could be made between enlarged reissues and those which were restricted or otherwise amended. But the decision of the courts since the decision of Miller *vs.* Brass Co., make a clear distinction between broadened and narrowed reissues as will be shown later. Furthermore, the trend of the decisions bears out the conclusion that the doctrine of laches must be regarded as an equitable doctrine, and that the authority of the courts to hold a reissue invalid on account of delay in filing the application, is founded upon equitable principles and not upon the terms of the reissue statute.

As above pointed out in Miller *vs.* Brass Co., the courts looked upon the failure to claim devices or combinations apparent on the face of the patent as a dedication to the public of that which is not claimed. "It is a declaration that that which is not claimed is either not the patentee's

invention, or, if his, he dedicated it to the public. The legal effect of the patent can not be revoked unless the patentee surrenders it and proves that the specification was framed by real inadvertence, accident, or mistake. . . . Nothing but a clear mistake, or inadvertence, and a speedy application for its correction, is admissible where it is sought merely to enlarge the claim." The nature of the mistake contemplated is referred to as a "*bona fide* mistake, such as a Court of Chancery, in cases within its ordinary jurisdiction, would correct."

In Topliff *vs.* Topliff, 145 U. S., 156, 59 O. G., 1257, decided ten years later, the Supreme Court, after a review of the decisions of the courts since Miller *vs.* Brass Co., stated the rule governing reissues as folllows:

> From this summary of the authorities it may be regarded as the settled rule of this court that the power to reissue may be exercised when the patent is inoperative by reason of the fact that the specification as originally drawn was defective or insufficient, or the claims were narrower than the actual invention of the patentee, provided the error has arisen from inadvertence or mistake, and the patentee is guilty of no fraud or deception; but that such reissues are subject to the following qualifications:
>
> First. That it shall be for the same invention as the original patent, as such invention appears from the specification and claims of such original.
>
> Second. That due diligence must be exercised in discovering the mistake in the original patent, and that, if it be sought for the purpose of enlarging the claim, the lapse of two years will ordinarily, though not always, be treated as evidence of an abandonment of the new matter to the public to the same extent that a failure by the inventor to apply for a patent within two years from the public use or sale of his invention is regarded by the statute as conclusive evidence of an abandonment of the patent to the public.
>
> Third. That this court will not review the decision of the Commissioner upon the question of inadvertence, accident or mistake, unless the

> error is manifest from the record; but that the question whether the application was made within a reasonable time is, in most, if not in all such cases, a question of law for the court.

Here the court reaffirmed the doctrine of Miller *vs.* Brass Co., and treated the failure to claim in the original patent as a constructive abandonment. Furthermore, in the statement that the court would not review the decision of the Commissioner upon the question of inadvertence, accident, or mistake, but that the question of delay, was one of law for the court, is implied the thought that delay can not be considered merely as evidence bearing upon inadvertence, accident, or mistake.

CONFLICT OF DECISIONS.

The questions of identity of invention, inadvertence, accident, or mistake, delay and intervening rights, have been so confused by the courts that the correct principles which shall govern the practice of the Patent Office in the granting of reissues are very difficult to determine. On these points, one may find a decision of some court to sustain almost any position which one might wish to assume. Some of the courts drew from Miller *vs.* Brass Co., the conclusion that a reissue could not enlarge the original claim; that this was wrong is indicated by the later decision in Topliff *vs.* Topliff. There is much conflict and uncertainty in the decisions upon each of these several matters.

If some of the controverted points can be settled to our satisfaction, it will aid materially in a ready disposition of the rights of reissue applicants.

RESTRICTED REISSUE—DELAY OF LITTLE CONSEQUENCE.

It seems to be fairly well settled by the best considered decisions of the courts that where it is sought merely to restrict the original patent, which is found to be too broad, delay is not of importance. The distinction between enlarged and narrowed reissues was made in the

case of Miller *vs.* Brass Co., and reiterated in Topliff *vs.* Topliff. In the enunciation of the doctrine of laches, the court indicated that where it was sought to enlarge the claims greater diligence would be required than where it was sought merely to correct the description or restrict the claims. There seems to be no conflict of authority upon this point but no court has laid down any general rule. In Sirocco Engineering Co. *vs.* B. F. Sturtevant Co., 173 Fed. Rep., 378, a reissue restricting the claims was held valid although the application was filed seven years after the granting of the original patent. In Steiner & Voegtly Hardware Co. *vs.* Tabor Sash Co., 178, Fed. Rep., 831, a delay of twelve years was held not a bar where the patent was narrowed. The latest decision on this point is in the case of Motion Picture Patents Co. *vs.* Laemmle, 214 Fed. Rep., 787, in which the Edison reissue patent for motion picture machines, granted over fourteen years after the date of the original patent, was held valid. In this case, the court set forth the distinction between broadened and narrowed reissues in the following words:

> "The books are full of cases where the courts have appreciated the importance of intervening rights, and have realized the injury which may or will be done to the public where, after either an unreasonable delay or a process of experimentation with court decisions, an attempt is made to broaden claims. In such instances, industry and commercial progress may be arrested if the courts were to hold to any doctrine which made it dangerous for energetic men to enter upon some well-defined field of activity only to discover subsequently that a grant theretofore given had been enlarged beyond the limits so defined. Thus it is that there is a line of cases of which Miller *vs.* Brass Co., 104 U. S., 350, 26 L. Ed., 783, and Thomson-Houston Electric Co. *vs.* Western Electric Co., 158 Fed., 813, 86 C. C. A., 73, are examples. Nowhere, however, has it been held that a reissue wherein the claims are narrowed is void for laches. It is true that in Pelzer *vs.* Meyberg, 97 Fed., 969, it was held that there were

> degrees of diligence in applying for a reissue, and that a higher degree was required in the case of a broadened claim than in the case of a narrowed claim. The case came up on demurrer, and apparently there was no excuse for the delay set forth."

It is to be noted that in this case the reissue gave the patentee a distinct advantage over and above that which flows from the conversion of a claim invalid because too broad, into a restricted valid claim. It secured to him a valid patent on which he might maintain suit for infringement, whereas it was a matter of much doubt whether suit could be maintained at all on the prior patent by reason of the patentee's failure seasonably to file, under Section 4922 R. S., a disclaimer of a claim which had been held invalid by the Circuit Court of Appeals. It is to be noted also that the patentee had delayed the filing of the reissue for over three years after the Court of Appeals had held the claim invalid, thus being clearly put upon notice of the defect by the ruling of a court whose decision is final on patent questions.

From a review of the authorities on this point it seems fair to conclude that when it is sought to restrict a patent, delay is of no consequence. This should be true even where it is proposed to secure more restricted claims in addition to the broader claims of the original patent; in other words, the rule should be regarded as permitting the addition of claims at any time during the life of the patent which come within the scope of the original claims, providing, of course, a proper showing is made of inadvertence, accident or mistake, and providing due diligence was exercised after the discovery of the error.

INTERVENING RIGHTS.

Intervening rights, which has been fatal to so many reissues, is a question which does not often, if ever, come before the Patent Office. The prosecution of reissue applications is entirely *ex parte*, as in other cases, and the office has no way of investigating this matter. There is a question whether the granting of patents between

the date of the original and the reissue is an intervening right. The Circuit Court in Minnesota in the case of American Bank Protection Co. *vs.* Electrical Protection Co., 181 Fed. Rep., 350, decided that it was not. To the same effect is Gaskill *vs.* Myers, 81 O. G., 1111; 1897, C.D., 699. The contrary holding was made by the District Court of New York in the case of Specialty Machine Co. *vs.* Ashcroft Mfg. Co., 205 Fed. Rep., 760, where there had been a delay of three years. This point has but seldom been directly involved and it can not be said that the law in respect thereto is settled. See also White *vs.* Dunbar, 119 U. S., 51; 1886, C. D., 494; American Soda Fountain Co. *vs.* Sweitusch, 85 Fed. Rep., 968; Clements *vs.* Odorless Apparatus Co., 109 U. S., 641; Flower *vs.* City of Detroit, 22 Fed. Rep., 292; Horn & Brannen Mfg. Co. *vs.* Pelzer, 91 Fed. Rep., 665.

INADVERTENCE, ACCIDENT OR MISTAKE—BROADENED AND RESTRICTED REISSUES.

Some of the decisions appear to make a distinction between the character of mistake which would warrant a broadening of claims by reissue and those where other defects are sought to be corrected. This is intimated in Miller *vs.* Brass Co., where the court says that a claim may be enlarged by reissue only when there has been a "real *bona fide* mistake, inadvertently committed, such as a Court of Chancery, in cases within its ordinary jurisdiction, would correct." Since the decision of the court was founded upon the proposition that the statute did not specifically provide for the enlargement of claims by reissue, it might well have imposed the condition that in such cases only such errors as a Court of Chancery might correct would be considered as sufficient ground for reissue, while errors of lesser moment might be corrected where it was sought merely to limit the claims or correct the description. But a review of later authorities indicates that an inadvertence, accident or mistake, which will support a narrowed reissue will also support a broadened reissue. Let us now examine the question, what may be considered an inadvertence, accident, or mistake.

It is believed that the weight of authority will sustain the proposition that any failure to secure in the original patent the invention to which the applicant was entitled which was not the result of a deliberate act, or was not the result of an intention to deceive, may be attributed to inadvertence, accident, or mistake. One of the most thoroughly considered cases on reissue is that of Crown, Cork & Seal Co. *vs.* Aluminum Stopper Co., 1901, C. D., 450, 108 Fed. Rep., 845, decided by the Circuit Court of Appeals for the Fourth Circuit. In that case, the court said:

> "A review of the earlier decision of the Supreme Court would seem to show that by 'defective or insufficient specifications" was meant any failure to describe or claim the complete invention upon which the application for the patent was founded, and that 'inadvertence, accident, or mistake' was used in antithesis to fraudulent intent, and that the right to reissue depends upon any failure to make the specification and claims legally adequate for their purpose, if due to any cause except an intention to deceive."

In the case of In re Briede, 1906, C. D., 677, the Court of Appeals found the existence of inadvertence, accident or mistake, where the error alleged was a failure to secure a certain claim arising from unfamiliarity of applicant and his solicitor with the English language.

In In re Heroult, 1907, C. D., 521, the same court found the existence of inadvertence, accident or mistake, where there was failure to secure a claim of sufficient scope which arose (according to the allegations of applicant, who was a citizen of France) because of ignorance of the difference between the laws of France and the United States.

In the case of Crown Cork & Seal Co. *vs.* Aluminum Stopper Co., cited above, there was a broadened claim and no showing of any particular inadvertence, accident, or mistake except an allegation that the application papers were hurriedly prepared, and that neither applicant nor his attorneys noticed the defects throughout the years of the prosecution of the application.

In the case of Houghton *vs.* Whitin Machine Works, 153 Fed. Rep., 740, it was held by the Circuit Court of Appeals for the First Circuit, that the failure to make claims of sufficient scope may be regarded as inadvertence, accident, or mistake. In Moneyweight Scale Co. *vs.* Toledo Computing Scale Co., 187 Fed. Rep., 826, 170, O. G., 728, the Circuit Court for the Seventh Circuit said:

> "The original specification alone on its face was sufficient proof that, if a claim adequate to cover the improved scale was never drawn, the failure came from the lack of an attentive comparison of the submitted claims with the invention particularly pointed out in the specification. This was inadvertence, "lack of heedfulness or attentiveness,' irrespective of the real competence or incompetence of the solicitors."

In Topliff *vs.* Topliff, where the Supreme Court sustained a broadened reissue, there was no showing of inadvertence, accident, or mistake, the oath alleging merely that the patent was defective and insufficient, and that the defects and insufficiencies arose from inadvertence, accident, or mistake. It is to be noted however, that the application in this case was applied for before an applicant was required to set forth the particular defects of his patent, what the errors were, and how they arose or occurred.

From a review of the authorities it is believed to be a fair conclusion that a mere failure to claim what was indicated in the drawings and specifications as a part of the invention is an inadvertence, accident or mistake within the meaning of the statute, unless the failure was due to an intent to deceive, or to some deliberate act inconsistent with the theory of inadvertence. And it is believed that this rule is as applicable to broadened reissues where the application is filed within two years of the date of the original patent as it is to restricted reissues. As a general rule, the defects and insufficiencies of a patent are not the result of a failure fully to describe the invention, or a failure to claim it with sufficient particularity; but they result from a failure to make

claims of sufficient breadth to protect the real invention. For example, a claim is made to a combination of four elements whereas it is clear to one skilled in the art that one of those elements may be omitted without destroying the capacity of the device to perform the substantial function set out in the specification. An ordinary inventor, or even one who has had considerable experience in patent matters, could not be expected to know that his invention was not fully covered by the claim to four elements. It must be the common observation of any one who has had any intimate knowledge of these matters that it is difficult even for those who are most highly skilled in the interpretation of claims sometimes to determine the true scope of a claim once drawn, or to draw claims adequate to protect the real invention. These difficulties were forcefully pointed out in the case of Crown Cork & Seal Co. *vs.* Aluminum Stopper Co., *supra*, where the Circuit Court of Appeals said:

> The learned counsel for defendant assumes that the subject is so simple that Painter should have discovered instantly upon reading the original patent the occasion for the reissue, if it existed. He forgets that what seems so simple and easy to him, a past-master of the subject, was not so to a mere inventor, unskilled in the art of interpretation, who could not upon a mere reading of his patent determine what his claims covered. Painter had no hesitation and no doubt what his invention covered, and almost immediately upon the hearing of the issue of Hall's patent he said that it was covered by his invention; but it was not until he was advised by his lawyer that he learned that his claims were not commensurate with his invention, and there was no delay then in filing his application for reissue. Some allowance may well be made for an unlearned man, when we remember that in the recent case of *Westinghouse* vs. *Power-Brake Co.* (C. D., 1898, 443; 83 O. G., 1067; 170 U. S., 537; 18 Sup. Ct., 707; 42 L. Ed., 1136) the Supreme Court itself required three hearings before it could determine the meaning and scope of the patent claims, and the record

> in this case shows that such learned experts as General Spear and Mr. Walker differ radically as to what the claims of the original patent cover.

In view of the difficulties of drawing up this very technical document and determining its metes and bounds, it is thought that it should be the general rule to regard any failure to secure to the owner of the patent adequate protection for the invention described and claimed as inadvertence, accident or mistake, if application is made for reissue promptly upon the discovery of the error, and within two years from the date of the original patent, unless the record itself is inconsistent with the allegation of inadvertence, accident, or mistake. In reviewing the showing of inadvertence, accident, or mistake, of course it is always necessary to examine the record of the original patent to see whether there is anything there inconsistent with the allegations of applicant's oath. If one in the prosecution of an application should make a certain claim, and, upon its rejection on references, cancel it in order to receive his patent, it is obvious that his act is deliberate and he will not be heard to say that he was mistaken in his judgment as to the pertinency of the references and desires a reissue to correct the error; the error in such case, if there was error, was not an error within the meaning of the statute, but an error of judgment merely. The same would be true if a disclaimer were entered in the specification during the prosecution of the case. If the record of the original patent is not consistent with the claim of inadvertence the intention of the applicant must be determined from the original record.

DELAY LESS THAN TWO YEARS.

The most difficult of all points to decide in passing upon reissue applications is whether the application has been seasonably filed. This does not present much difficulty when the aplication is filed within two years. By this I do not mean that any application filed within two years is seasonably presented. Reissues have been held void because of laches in filing the application in cases where

the delay was only a few months. An examination of those cases where a delay of less than two years was held fatal will show that in a majority of the cases there were actual intervening rights, or that the owner of the patent did not proceed with diligence after the discovery of the defects in his patent or after he was put upon notice of such defects.

DELAY MORE THAN TWO YEARS.

What are the principles to govern the grant of a reissue application for broadened claims which has been filed more than two years after the date of the patent? No general rules can be laid down. The decision in each case must depend upon the particular circumstances.

In the case of Mahn *vs.* Harwood, 112 U. S., 354, the Supreme Court said:

> "In Miller *vs.* Brass Co., by analogy to the law of public use, before an application for a patent, we suggested that a delay of two years in applying for such correction should be construed equally favorable to the public. But this was a mere suggestion by the way, and was not intended to lay down any general rule. Nevertheless the analogy is an apposite one, and we think that excuse for any longer delay than that should be made manifest by the special circumstances of the case."

It should appear from applicant's showing when the mistake was discovered, and if the reissue application was not promptly filed, the reason why. If circumstances were of a compelling nature delay should be excused, but delay on account of attention to other business matters should not suffice as an excuse.

It is not seen that the character of the mistake which it is sought to correct has any relation to the doctrine of delay except as it has a bearing upon its probable discovery. A mistake might be so plain that any interested party, upon reading the patent, would discover it. On the other hand it might be so obscure that one could

not be reasonably expected to discover it. In the latter case, a much longer delay would be excusable. In fact, if the mistake were such that by ordinary vigilance, it would not be apparent, and the owner of the patent is not put upon notice of its defect, it would seem that the Patent Office could not refuse a reissue even after a delay of several years.

But when the mistake is discovered, the practice requires that its correction be diligently sought, or that failure to act promptly be satisfactorily explained.

Special Cases Arising in Interference Proceedings

A paper read May 6, 1915, before the Examining Corps of the United States Patent Office

BY

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U. S. Patent Office.

WASHINGTON, D. C.
1915

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Introduction.

The general practice in interference cases, as the same arise in the Patent Office, is now fairly well established, and may be understood from the Rules of Practice and from the published decisions and text-books. But special cases and unusual questions frequently arise, and the decisions upon these, though not always reported, nevertheless form precedents for subsequent cases involving similar questions. A few of such special cases have been selected for discussion in this paper.

Order of Parties.

The principal examiner in preparing the notices for interferences is required to arrange the applications in the inverse chronological order of the filing of the particular applications involved (Rule 97; and Raulet and Nicholson *vs.* Adams, 114 O. G., 1827; 1905 C. D., 55). However, if any application is clearly a division or continuation of some earlier application he is required to so state in the notice to the Examiner of Interferences, in order that the latter may take cognizance thereof and fix the burden of proof with that fact in mind. But if the principal examiner is in doubt whether a particular application is in fact a division or continuation of another, he makes no mention of such earlier case, leaving the point to be raised by formal motion to shift the burden of proof on behalf of the party seeking advantage of

such application (Jackson *vs.* Patten, 150 O. G., 265; 1910 C. D., 2).

Cases Filed on Same Day.

It sometimes happens, however, that two applications claiming the same patentable invention are filed on the same day. While these cases are not numerous, several instances have occurred in the last few years. The fact that one application bears a higher serial number than another filed on the same day indicates nothing, for the numbering of applications filed in the Office on any given date is largely a matter of chance. Moreover, fractions of a day are not recognized by the Patent Office in the filing of papers. The numbers of such applications are therefore not a guide in fixing the burden of proof, since they constitute no proper reason for regarding either party as senior with respect to the other. The applications are in fact regarded as having been filed simultaneously. In order that the burden of proof may be based upon some act of the parties themselves, it is the practice to place the burden upon him who last executed his application, and such applications are therefore arranged in the inverse chronological order of the dates upon which the same were executed.

Priority Awarded to First to Conceive Where Reduction to Practice is Simultaneous.

A case such as the above may present a novel situation when the same comes on for determination upon proofs. The general rule is that priority is awarded to the party who first completes and demonstrates the practicability of his invention, or who first constructively reduces to practice by filing an application; except where another, who was the first to conceive was exercising diligence in perfecting his invention at the time his rival entered the field, and continued diligent until his own reduction to practice, either actual or constructive. But where no actual reduction to practice is proved by either party, and each is restricted for this act to his filing date, the reductions to practice, while constructive, are simultaneous, and it is necessary to determine by other means which of the two parties is entitled to the award of priority.

Only one instance in which this question has been seriously presented has been discovered. In that case, while both parties took testimony, neither actually reduced to practice, and the evidence was held to show prior conception by the senior party. It could not be said that he was the first to conceive and the first to reduce to practice, because the reductions to practice were simultaneous. It was held, however, that priority should be awarded to the party who proved an earlier conception. While in that case the judgment was in favor of the senior party, the theory upon which the judgment was rendered would appear to apply to either party, and if the junior party had proved the earlier conception, the judgment would probably have been in the latter's favor. In other words, it is the sense of that decision that, as between two parties standing on an equal basis as to their reduction to practice, the award should be in favor of him who first conceived the invention. No question of diligence seems to have been presented in that case, but it is believed that the same conclusion would have been reached irrespective of any question of diligence which might have been presented. In arriving at their decision the Examiner of Interferences and the examiners-in-chief appear to have been guided, to some extent at least, by the decision in the case of Smith *vs.* Foley *vs.* Anderson *vs.* Smith (136 O. G., 847; 1908 C. D., 210). In that case the applications of Foley and Anderson were filed on the same day. As between these parties there seems to have been no serious contest; but the decision of the Commissioner contains the statement that since neither had proved actual reduction to practice, Foley was entitled to prevail. This prior decision in the case of Smith *vs.* Foley *vs.* Anderson *vs.* Smith, *supra*, was not referred to by the Commissioner in his decision in the above mentioned case which has more recently been before the Office for determination, but he affirmed the decision of the Examiners-in-Chief as to all points. An appeal has been taken to the Court of Appeals of the District of Columbia, and the holding of the Commissioner upon this point has been urged as one of the grounds of appeal.

Identical Dates.

In the case last referred to the parties were claiming the same record date for constructive reduction to practice. Another interesting case involving a similar situation arose a few years ago with respect to record evidence. Section 4887 of the Revised Statutes particularly provides that an application for patent filed in this country by a person who has regularly filed an application for the same invention in a foreign country (if an adherent to the International Convention) shall have the same force and effect as the application would have had if it had been filed in this country on the date it was filed in the foreign country, provided the application was filed in the United States within twelve months from the earliest foreign filing date. In the case referred to the applications in the United States were filed on different dates, but each party had filed an application in Germany for the same invention as that embodied in his United States application, and it so happened that these applications were filed on the same date. Since the benefit accruing under the statute is based solely upon the filing of the application, no evidence of any earlier act by either party, such as conception or actual reduction to practice, could be accepted. No evidence was introduced as to any acts of invention in this country, and the case had to be decided on the rights of the parties as established by their foreign applications. Here then the parties not only were entitled to the same date for constructive reduction to practice, but they were likewise both restricted to this same date for conception of the invention. In other words, the parties were both entitled to the same date for conception and to the same and the identical date for constructive reduction to practice. The Examiner of Interferences took the position that the burden of proof was properly upon the party last to file his United States application, and his opponent, being the first to present in this country an allowable application, was in the eyes of the law entitled to a patent therefor, unless the later to file proved a superior right. Inasmuch as the only evidence presented by either party was that of the filing of his German application, it was held that, since the junior

party had established a right only equal to that of the senior party, he had failed to sustain the burden resting upon him, and priority was awarded to the senior party, the first to file in the United States. Appeal was taken to the Examiners-in-Chief. That tribunal was of the opinion that, notwithstanding the fact the German applications were filed on the same day, the records of the German Patent Office ought to disclose which of the two applications was in fact first presented. The Examiners-in-Chief recommended to the Commissioner that the case be remanded to the Examiner of Interferences with directions to call for evidence upon this point. The parties were required to secure the additional evidence, but when again presented the evidence failed to give any more definite data than that originally supplied. The case was therefore again decided in favor of the party who first filed his application in the United States. The decision became final without appeal.

Right to Make Claims.

Since the decision of the Court of Appeals of the District of Columbia in the case of Podelsak and Podelsak *vs.* McInnerney (1906 C. D., 558; 26 App. D. C., 399) the question of the right of any party to make claims corresponding to the issue has been considered as a question ancillary to that of priority of invention proper. Many such cases have been presented, and when it is found that one of the parties can not make such claims, priority is awarded to his opponent. Cases have arisen, however, in which it has been found that the claims as presented will not read upon the application of any party to the proceeding. While such cases are unusual, two instances have occurred to the writer's knowledge. With such a situation no award of priority can be made to either party, and it might at first appear that such an interference should be dissolved. When the first case arose such a recommendation was made to the Commissioner. After hearing the parties he declined, however, to dissolve the proceeding, and remanded the same to the Examiner of Interferences with directions to enter a judgment to the effect that neither of the parties was entitled to make the claims, and therefore neither was the inventor of the subject-matter

in issue. This action was taken on the theory that the appellate tribunals might come to a different conclusion as to one of the applicants, and if it should be eventually held that either could make the claims, a true case of priority would be at once presented.

In the second case, which was but recently presented, a similar judgment was entered.

Patent Invalid. Dissolution.

This unusual case was once presented. An interference was declared between an application of one party and a patent to another based upon an application filed subsequent to the filing date of the first party. The patentee being the last to file was made the junior party and was required to prove his case over that of the applicant. Inasmuch as one party was a patentee the only question to be determined ultimately was the right of the other party to a patent. The patentee claimed the benefit under the International Convention of the filing date of a certain German patent. It at once appeared that the application upon which the German patent was based was filed in Germany more than one year before the patentee's application was filed in this country, and, further, that the German patent issued before the United States patent was granted. It was thus apparent that the United States patent was invalid. Moreover, while the German patent invalidated the United States patent based upon the same disclosure, the same was not a reference for the other party, because it was not sufficiently early to operate as a bar. In view of the fact that the patent was invalid, and since the patentee could not under his preliminary statement present any evidence other than his German application, there seemed to be no reason for the continuance of the interference. The proceeding was dissolved by order of the Commissioner, based upon the recommendation of the Examiner of Interferences.

Suspension.

It occasionally happens that infringement suits and interference proceedings between the same parties are running at the same time, as where one of the parties has obtained a patent and sues the other for infringement. Under Section 4920 of the Revised Statutes the defendant may

prove that the patentee was not the first inventor, and in doing so may prove that he himself was the real and true inventor. To some extent, therefore, the questions presented in the suit may be the same as those to be determined in the interference. The Office is sometimes asked to suspend the interference pending final determination of the suit. No suspension will however ordinarily be made. As was pointed out in the case of McBride *vs.* Kemp (109 O. G., 1069; 1904 C. D., 89), the statute particularly directs the tribunals of the Patent Office alone to determine the question of priority of invention between two or more parties each asking a patent for the same invention. Section 4904 of the Revised Statutes specifies when an interference should be declared, and directs that the Commissioner shall, when the proper circumstances arise, institute the proceeding. It requires that he shall direct the primary examiner (Examiner of Interferences) to determine the question of priority in the first instance, and provides for appeal to the Examiners-in-Chief and Commissioner. An appeal to the Court of Appeals of the District of Columbia is provided by a later statute.

In view of the fact, therefore, that the statute particularly designates the method of determining interferences and provides no other, it would be useless to suspend the same, pending determination of a suit for infringement, in which the question at issue in the interference could be raised only incidentally or collaterally. Thus, while the Office is in no way bound by any court decision in an infringement suit even though substantially the same question may be presented, the principle of comity is always respected, and due deference given to decisions of such character. It not infrequently happens therefore that the tribunals of the Patent Office and the federal courts arrive at very different conclusions upon the same state of facts. A recent case is in point. A party Wright secured a patent. Some time after the issuance thereof another party, one Brownlee, filed an application for the same invention, and an interference was declared. The invention was a gas iron for laundry purposes. Before the interference was declared Wright sued Brownlee in the District Court for the Eastern District of Pennsylvania, for in-

fringement of his patent. The court held that the invention originated with the defendant Brownlee, and dismissed the suit (Wright *vs.* Brownlee et al., 205 F. R., 526). When the interference came on for final hearing, the Examiner of Interferences, while not regarding the case as free from doubt, likewise came to the conclusion that the invention was that of Brownlee, and decided with the trial court in the infringement case. Upon appeal to the Examiners-in-Chief this decision was reversed, and that tribunal held that Brownlee had failed to sustain the burden which was upon him to prove his case beyond a reasonable doubt, and reversed the decision of the Examiner of Interferences. In the meantime appeal was taken from the decision of the trial court in the infringement case, and the Circuit Court of Appeals for the Third Circuit, in a decision dated April 2, 1914, reversed the trial court, adopting almost in *toto* the language of the decision of the Examiners-in-Chief (Wright *vs.* Brownlee et al., 212 F. R., p. 157). The decision of the Examiners-in-Chief was affirmed by the Commissioner on appeal. No further appeal was taken.

Dissolution in Cases Well Advanced.

After an interference is well advanced, and particularly after proofs have been taken, the same will not ordinarily be terminated without a judgment. But in special cases a dissolution may be ordered without an award of priority, as where it very clearly appears that a statutory bar exists to the grant of a patent to one or more of the contesting parties (Neill *vs.* Commissioner of Patents, 82 O. G., 749; 11 App. D. C., 584; Oliver *vs.* Felbel, 100 O. G., 2384; 20 App. D. C., 255).

Dwiggins vs. Reid, Reid and Kelly.

The case of Dwiggins *vs.* Reid, Reid and Kelly, recently before the Office, developed an unusual and interesting situation. Both parties were applicants. The issue consisted of a large number of counts. Testimony was taken by both parties, and the case submitted for final disposition upon the record thus made. The Examiner of Interferences divided the issue, awarding certain of the counts to Dwiggins and the others to Reid, Reid and Kelly. The evidence showed, however, that Dwiggins had built, had publicly

used, and had sold a machine embodying certain counts of the issue many years before he filed his application. The machine was first sold in 1903 and used for nearly a year in the manufacture of fencing. It was then changed in some respects, and the use continued for a considerable period of time. In 1905 it was sold a second time, and the second purchaser continued to use it, with perhaps minor changes, until 1909. The Examiner of Interferences noticed the fact that the Dwiggins application was probably invalid for all counts which would read upon this early machine. He, however, awarded priority of invention as the evidence seemed to require, but followed the same with a recommendation to the Commissioner under Rule 126, directing his attention to the apparent statutory bar.

The Commissioner, however, thought that the oath made to the Dwiggins application partook of fraud, and concluded that under the circumstances Dwiggins was not entitled to an award of priority. He accordingly vacated the judgment of the Examiner of Interferences and directed that if appeal should be taken by Dwiggins as to the counts which had been awarded to Reid, Reid and Kelly, the Examiners-in-Chief should dismiss the appeal. The appeal was taken, and was dismissed by the Examiners-in-Chief as directed. Dwiggins then filed in the Supreme Court of the District of Columbia a petition for mandamus, asking that the Commissioner be directed to set aside the orders referred to. The petition was denied. Appeal was taken to the Court of Appeals of the District of Columbia, and the action of the lower court sustained (United States *ex rel.* Dwiggins *vs.* Ewing, Commissioner of Patents, 214 O. G., 1025).

Another case was recently presented in which the interference was likewise between two applications. When the evidence was considered, it clearly appeared that machines embodying the issue had been used by the junior party for nearly seven years prior to the filing of his application, and for four years prior to the filing of the senior party's application. It was apparent from the evidence that the junior party was the prior inventor, but inasmuch as the use of this party's early machines was apparently a bar to both parties, it

was concluded that the interference should be dissolved without an award to either party. Since the machine had been in public use for many years it was held that the junior party was not entitled to even a technical award of priority. It was therefore recommended that the interference be dissolved without a judgment, and an order to this effect was issued by the Commissioner.

Successive Interferences.

A second interference will not usually be declared between the same applications, or between new applications by the same parties relating to the same general invention. But a second interference is sometimes rendered necessary in order that the successful party in the first proceeding may secure the full benefit of the judgment in his favor, as where the losing party in the first case is permitted to go to patent with claims which should have been rejected upon the issue.

In an interference between K and W priority was awarded to the latter. K canceled the claims corresponding to the issue, and was permitted to go to patent with other claims which should have been rejected upon the issue. W went to patent without making claims corresponding to those remaining in K's application, but which clearly read upon his own disclosure and fell within his statement of invention. W filed a reissue application embodying the claims of K's patent and demanded a second interference. The interference was declared. On motion for judgment by W on the ground that the rights of the parties were determined by the judgment in the first case, it was held that the decision in the earlier case was determinative not only of the actual matter there adjudicated, but of all other matter there in issue and which might have been adjudicated therein, and priority was awarded to W in the second interference on the ground of *res adjudicata*.

In another case an interference had been declared between A and H. Upon the evidence presented priority was awarded to A. H canceled claims corresponding to the issue, but was permitted to go to patent with other claims only slightly different from those constituting the issue, and the most of which clearly read upon A's disclosure. After the patent issued

A copied these claims and demanded a second interference. The Examiner refused to declare the same, but the Commissioner directed that the interference be instituted. Without waiting for the filling of preliminary statements A moved for judgment on the ground of *res adjudicata*. The motion was granted and judgment rendered in his favor as to the issue of the second interference on the ground that the subject-matter thereof was, in effect, in issue in the earlier case, and the question of the rights of the parties with respect to these claims was determined by the decision in the earlier proceeding.

Evidence (Three or More Parties.)

In interferences involving three or more parties some unusual questions with respect to the introduction of evidence arise. If all junior parties allege dates of conception prior to the senior party's filing date, the case is perfectly simple. Times for the taking of testimony are set for all parties in order. But where certain of the junior parties fail to overcome the filing dates of some or all of those who are senior, an unusual situation may be created.

Take, for instance, the three-party case. We may have, first, a case in which the junior party fails to overcome the filing date of either of the other parties; or, second, where he fails to overcome the senior party only; or, third, a case in which the intermediate party fails to overcome the senior party. Any party failing to overcome any senior party is placed under an order to show cause on or before a time specified why judgment should not be entered against him upon the record.

In the first case, if the junior party moves to dissolve, he should proceed against both senior parties, for if he eliminates one only, the other will still stand as a bar to his right to a patent. If it is held on motion to dissolve that both parties can make the claim, the junior party may then have the case set for final hearing under the provisions of Rule 130, in order that he may argue this same question as a basis for an award to himself. But under such circumstances the case will not be at once set for hearing, because the intermediate party, having alleged conception prior to the senior party's filing date, is entitled to take proofs upon this question.

Times for the taking of testimony between these parties only will therefore be set, but the junior party will be permitted to remain in the case until the same comes on for final hearing, so that all the questions may be argued and determined at one hearing. When the case comes on for final hearing, if it be found that neither of the other parties can make the claim, the award of priority will be to the junior party. If, however, it be found that either can make the claim, the junior party can not prevail.

In the second case, where the junior party overcomes the intermediate party, but fails to overcome the senior party, a different situation is presented. Here the motion to dissolve need attack the right of the senior party only to make the claim. If he succeeds in eliminating such party he will be entitled, as a matter of course, to take testimony with respect to the intermediate party. If, however, the interference is not dissolved and the senior party remains in the case, the standing of the junior party is somewhat anomalous. He is under an order to show cause why judgment should not be entered against him, with the senior party standing as an apparent bar. But if he should succeed at final hearing in showing that the senior party can not in fact make the claims, he is entitled then to contest the question of priority with the intermediate party. This situation not infrequently occurs. If the junior party asks to have the question of the senior party's right to make the claim argued at final hearing, he will be permitted to remain in the case; and since he may establish his contention that the senior party can not make the claims, he will be permitted to take testimony to establish his rights with respect to the intermediate party. Thus all possible questions will be disposed of at the same time. The practice therefore is to set times for the taking of testimony as between all three parties, so that all the evidence can be presented at one hearing.

In the third case, if the intermediate party moves to dissolve on the ground that the senior party can not make the claims, and such motion is denied, he likewise may argue this same question at final hearing as a basis for an award to himself. If he requests

to be heard upon this question, times will be set for all three parties to take testimony; for should he succeed in showing that the senior party can not make the claims, he will be in position to contest priority with the junior party.

Inoperativeness.

It sometimes happens that the operativeness of a party's disclosure is attacked by one of the other parties to the proceeding. This question should first be raised, if possible, by motion to dissolve. If the law examiner holds the structure to be operative, the other party not infrequently desires to take testimony to establish his contention. Numerous cases have arisen in which such testimony has been introduced. The experience of the Office is, however, that unless the invention is involved or abstruse, such evidence is of comparatively little value. In ordinary mechanical cases, the operation of which can at once be understood, evidence upon the question of operativeness is seldom of any substantial use.

Where the junior party has alleged conception prior to the senior party's filing date, and is therefore entitled to take testimony on the question of priority proper as a matter of course, he may, while introducing his testimony on the main question, take testimony also on the question of operativeness. No special permission to take such testimony need be secured. If evidence is introduced which is of such a character as to be useless in the final disposition of the case, the same will be simply disregarded, or struck out on motion. But in those cases in which the junior party has failed to overcome the senior party's filing date, and desires to take testimony on the question of operativeness of his opponent's structure, he must secure special permission to do so (Lowry and Cowley *vs.* Spoon, 1906 C. D., 224; Browne *vs.* Stroud, 1906 C. D., 226). A motion for permission to take such testimony is necessary, and the same must be accompanied by a satisfactory showing under oath, setting forth generally the facts which it is proposed to prove, and the witnesses who will be called to establish these facts. This is necessary in order that the Office may know that the same will be fact testimony and useful, and not merely the opinion of experts upon questions which the tribunals must de-

cide for themselves. Where, therefore, a party desires to take testimony upon such questions, the affidavits in support of the motion should make it clear, generally at least, what the moving party proposes to establish.

Evidence in Foreign Countries.

Generally speaking, acts done in a foreign country are not available as evidence in support of a claim of priority in this country. But when the question is that of originality, it may be necessary to secure the testimony of parties living abroad. And where parties seek the benefit of foreign filing dates under the provisions of Section 4887 of the Revised Statutes, it sometimes becomes necessary to establish the facts by testimony. If the witnesses can not be brought to this country, or where the expense and trouble of doing so would involve hardship greatly in excess of that sustained by an opponent in taking the testimony abroad, the testimony may be taken in the countries where the witnesses live.

Under the authority of Section 4905 of the Revised Statutes, authorizing the Commissioner of Patents to make rules for the taking of testimony generally, a special rule has been promulgated for taking testimony abroad (Rule 158). The practice adopted is the same as that used generally by the courts to secure testimony in a foreign country. Two methods are in use; first, by a commission directed to some consular or diplomatic officer of the United States residing in the country where the witnesses are located; and, second, by letters rogatory addressed to a court of competent jurisdiction in the country where the witnesses live.

The number of cases in which testimony had to be taken abroad was formerly quite large. But since the decision of the Commissioner in the case of Steel and Steel *vs.* Myers, 205 O. G., 1021, which permits a party to take advantage of any foreign application by motion to shift the burden of proof under circumstances recited in the decision, the cases wherein it has been necessary to take testimony in foreign countries have been much lessened.

In any case permission to take the testimony must first be secured by motion duly made and noticed upon

the other party. When it is shown that the testimony is necessary and probably will be useful, permission to take the same will be granted, and the taking of testimony in this country suspended, unless the parties otherwise agree. The commission is transmitted by the Commissioner of Patents through the Department of State to the officer to whom it is directed. After the testimony is taken it is returned to the State Department, and by that Department transmitted to the Patent Office.

When it becomes necessary to take the testimony of witnesses in Germany, a commission is not admissible unless the witnesses will testify voluntarily. The courts will not compel their attendance. Therefore, while commissions are sometimes issued to consuls or other United States representatives in Germany, this is only done where it is known in advance that the witnesses are friendly and will probably testify of their own free will. Because of this uncertainty, letters rogatory are quite commonly used instead. These are directed to the court having jurisdiction over the witnesses, requesting that steps be taken to secure the necessary evidence. These letters are transmitted through the State Department to the American Ambassador, who forwards them to the German Foreign Office with a request for their execution. At that point they pass to the control of the German officials, are transmitted to the proper court, and, when executed, are returned through the same channels.

The Department of State requires in all cases a deposit of at least $100 before the commission or letters rogatory are transmitted. After the evidence is returned, any surplus remaining is, of course, returned to the depositor.

Conclusion.

Illustrations might be greatly multiplied, but those given will serve to indicate to some extent the variety and character of questions, merely incidental or collateral to priority proper, which are presented for consideration and determination. Many of the questions raised in an interference are identical with those which may be raised in an infringement suit, but there are others arising more or less frequently which never occur in a suit in the federal courts.

Interferences as the same arise in the Patent Office have been given much consideration, and there is perhaps no branch of the patent law concerning which there is greater difference of opinion. Some persons advocate the entire abolition of interferences in the Office, arguing that the whole matter should be left to the courts, while others prefer to have the statute remain as it now is. Between these extremes many proposed modifications of the existing law have been suggested. The subject is an inherently complex one. The very fact that there has been so much discussion by men well informed and competent to criticize, but that the law nevertheless remains as it was in 1870, is in itself sufficient evidence of the difficulties in the way of any radical change.

Fundamentally, the system is a just one, for it aims to secure the rights of the party who is in fact and in law entitled to such protection. The Constitution itself, in giving to Congress authority to legislate upon the subject, delegated broad powers; but nevertheless introduced certain limitations which must be taken into consideration. In the first place Congress is authorized to secure to inventors only the exclusive control of their creations, and even this control must be for a limited time. In other words, it was apparently the intention of the makers of the Constitution that the reward should be to the party who in truth and in fact produced the invention; therefore before any patent can be granted to any one of two or more parties claiming the same invention, it is necessary to determine who was in fact the first inventor.

This fact appears to have been early recognized; for while the original law of 1790 made no reference to conflicting applications, the law of 1793, which supplemented that of 1790, contained a very carefully worded section relating thereto. The applications are here called "interfering" applications, and this is apparently the first time in which the expression occurs. The method of determination specified by the statute was that of arbitration. Even at that early date it was recognized that there might be more than two so-called interfering applications, and the statute particularly set forth how the arbitrators should

be selected, both where there were two conflicting applications and where there were more than two. The section of the statute to which reference has been made, reads as follows:

> Section 9. And be it further enacted, That in case of interfering applications, the same shall be submitted to the arbitration of three persons, one of whom shall be chosen by each of the applicants, and the third person shall be appointed by the Secretary of State; and the decision or award of such arbitrators, delivered to the Secretary of State in writing, and subscribed by them, or any two of them, shall be final, as far as respects the granting of the patent. And if either of the applicants shall refuse or fail to choose an arbitrator, the patent shall issue to the opposite party. And where there shall be more than two interfering appplications, and the parties applying shall not all unite in appointing three arbitrators, it shall be in the power of the Secretary of State to appoint three arbitrators for the purpose.

This was the law until 1836, when general changes in the patent system were made. The law of 1836, in so far as it related to interferences, remained in force until 1870, and Section 42 of the law of 1870 is in substance identical with Section 4904 of the Revised Statutes, now in force. A short history of the laws relating to interferences may be found in the decision of Commissioner Duell in the case of Little *vs.* Lillie *et al.*, 1876 C. D., 207.

May 6, 1915.

A Phase of Double Patenting

A paper read February 8, 1917, before the Examining Corps of the United States Patent Office

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WASHINGTON, D. C.
1917.

A Phase of Double Patenting

A paper read February 8, 1911, before the Examining Corps of the United States Patent Office

by

ARTHUR W. COWLES
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WASHINGTON, D. C.
1911

itself. An invention is either a physical operation or a physical instrument, and as such its essential characteristics are determined by the laws of nature. No human legislation, no judicial interpretation, can increase, modify, or diminish its necessary attributes, and no legal doctrine concerning it can be correct which is based upon a partial or erroneous view of those inherent qualities that differentiate it from all other actual or possible inventions. What is thus true of individual inventions is true of all inventions, considered as a class of agencies employed by man for the production of physical effects. An invention, in that it is an invention, possesses certain attributes without which it could not be an invention, attributes which the law can not alter, and which it can not ignore with any prospect of arriving at reliable conclusions upon any problem that relates to inventions. A clear and accurate apprehension of these necessary attributes is, therefore, the first step in any investigation of the principles and rules of Patent Law, as well as the only guide to the solution of those difficulties which the practical application of that law presents.

And again, on page 136 of vol. 1:

The means by which man satisfies a want arising out of his relations to the external world is, on the contrary, invariably the result of the creative act. The idea which underlies it is necessarily conceived by one before it can be perceived by any. However great the want, however simple the method by which it is supplied, that method can originate only through the exercise of faculties which produce new operations or devices, and not merely discern and imitate the old. When man first came in contact with material nature, he found awaiting him the means of satisfying his most urgent if not all of his essential needs. Fruit offered itself to him for his food, water for drink, the caves and

> forests for his shelter. Beyond what nature thus spontaneously provided, he could not pass without employing his inventive skill, and every step in his material advancement has consisted in the creation of new means by which his constantly suggested wants could be supplied. The process by which he first generated artificial light or heat was thus as truly an invention as his last conquest over the difficulties of petroleum or electricity: the first rude car, on which he carried burdens previously borne upon his shoulders, embodied his creative act as fully as the ponderous engine whose glittering wheels transport the wealth of nations across continents with ceaseless energy and lightning speed.

It is thus made clear that for ages man has used certain instruments for what he has believed to be his welfare. This use has led him to conceive of certain conditions which he has believed would contribute still more to that welfare. There has followed naturally a study of the instruments at his service to determine why these instruments were not capable of producing the newly desired conditions, an endeavor to discover precisely wherein the instruments were defective, and what would cure the defect. The discovery of new uses of the instruments concerned or of structural modifications of the instruments whereby their use would produce the newly desired condition was a conception. So also, the discovery of how the supply of a known instrument could be increased without an increase in the expenditure of the force necessary to produce the instrument was a conception; as was the discovery of how an instrument which had lost its full efficiency could be operated on so as to restore that efficiency wholly or partly.

But a conception is only a definite idea. And an idea is not an instrument or a use of an instrument. There must be such an embodiment of the conception as produces a process or an instrument capable, in its turn, of producing the desired improvement.

It may be that the conception is sufficient, since there may be at hand processes or instruments which without

change are recognized as capable of producing the conceived instrument or of carrying out the conceived process, so embodying the conception.

But it may be that such capacity to embody does not exist in known processes or instruments in their precise form. If change in their form is necessary, every definite and successful idea of the changed process or instrument is in its turn, a conception.

The ultimate object, then, is the use of instruments for the supposed welfare of mankind. Mr. Robinson says:

> "An art or operation is an act or series of acts performed by some physical agent upon some physical object and producing in such object some change either of character or condition."

And, on page 25, of vol. 1, he says:

> "The elements, the earth, animal creation, the members of the human body, are as available as the machines and chemical compositions which have resulted from inventive skill. Their action may be positive or negative—working their changes in material objects by adding to, or altering their quantity or qualities, or by subtracting or suspending attributes which otherwise would hinder a desired result. To the inventor of an art the entire universe thus offers itself as his armory, and all the works of God and man are ready to become his instruments."

Man's welfare appears to him to lie in a satisfactory physical condition and in pleasurable sensations. So he uses a multitude of processes and instruments to supply himself with food and pleasure. For example, he ploughs and cultivates the soil to improve it as an instrument to cooperate with the seed and the elements in producing food, the food thus produced becoming in its turn an instrument for supplying nutriment to the body in order to restore the body to its normally active condition as an instrument for use in daily life. He is constantly restoring the desired efficiency in himself or his apparel, or other property, by shaving his

face, cleaning his clothes, or the streets, repairing his house, etc.

Another multitude of instruments contribute to his mental and moral development and to his pleasure; e. g., books, schools, lectures, sermons, toys, theaters, etc.; or to his combined physical act mental welfare, as automobiles, sports, etc. The desire of man that instruments or their uses may be improved, in order to better promote his welfare, is in some countries so great that patent systems have been established to encourage such development. In such a patent system every physical thing from the paper used in an entrance examination in choosing workers to the paper on which the patent grant is impressed is an instrument, and every bodily or mental act in the use of these instruments is a process.

Indeed, it may not be an exaggeration to consider the earth and its fullness as an instrument used by man so far as he recognizes its capabilities, for his welfare, and that a cargo of food carried from New York to Liverpool is but a process performed on a part of the earth's equipment and using the ocean, the vessel, and its propelling means as apparatus, to improve the earth as an instrument.

As therefore every process produces in an object "some change either of character or of conditions," and considering what is stated above, apparently every process either produces a new instrument, or produces an old instrument in greater quantity with a given expenditure of force, or endeavors to restore an old instrument to something like its original character. And all these instruments are products. It seems reasonable therefore to consider that a product is the "broadest" embodiment of the inventive act, and that the actual primary conception is of an improvement in the relation of some product as an instrument concerned with what is believed be the welfare of some person, or persons, and this improved relation of the product is produced by a process, the process needing apparatus, sometimes mechanical, to carry it out. If so, processes and apparatus are, so far as concerns the product, only factors in providing the relation. On the same principle a conceived process

is a "broader" thing than the apparatus which carries out the process, so far as concerns the embodiment of the conception; and a conceived apparatus, in its turn, is "broader" than the process or apparatus concerned in the production of the conceived apparatus.

The conception may be of a new product or of a new process, or of a new apparatus, or of a combination of them. This condition may be tabulated—

	Product.	Process.	Apparatus.
1	New	Old	Old
2	Old	New	Old
3	Old	Old	New
4	New	New	Old
5	Old	New	New
6	New	Old	New
7	New	New	New

Condition 1 is, of course, the commonest. The conception of the product is sufficient, as there exist processes and apparatus capable, without change, of embodying the product conception.

Conditions 2, 3, and 5 are concerned with cheapening or repairing a product.

Condition 4 exists when a process must be modified or discovered to embody the product conception.

Condition 5 exists when an apparatus must be modified or discovered to embody the process conception.

Condition 6 exists when a modified or discovered apparatus is necessary to embody the product conception.

Condition 7 exists when both a process and an apparatus must be modified or discovered in order to embody the product conception.

In every case there is a conception of something new, and in every case the factors which contribute to the embodiment of the conception are necessarily subordinate to the new thing conceived, so far as concerns the act of embodying that conception. If the thing conceived is a product the process and apparatus concerned in its production are subordinate to the product, as to the act of production. If the new thing conceived is a process the apparatus for carrying out the process is subordinate to the process as to the carrying out of the

process. If the thing conceived is apparatus, the apparatus itself becomes the desired product and the process and apparatus concerned in the production of the conceived apparatus are subordinate to the conceived apparatus.

Every new thing resulting either from the primary conception or from a subordinate conception is thus a new act or instrument taking its place with acts or instruments already known, is added to the "sum of information" possessed by those skilled in the art.

Now it may easily happen that when a process is conceived as a factor in making a conceived product, or an apparatus is conceived as a factor in carrying out a conceived process, one skilled in the art may immediately recognize that the conceived process has capabilities by virtue of which the process may be used as a factor in making other products, or that an apparatus conceived as a factor in carrying out a conceived process may be used as a factor in carrying out other processes. Indeed, this latter condition is common. An apparatus conceived for the purpose of carrying out a conceived process may be of much more commercial value than the conceived process, because the apparatus may be capable of use as a factor in many processes. But as to every process in which it may be used it is subordinate to that process.

The same relation exists as to product and apparatus in conditions 6 and 7 above, in which the product is new and the apparatus is new. The apparatus involved in the production of the product is only a factor in that production. However wide the use of the new apparatus as an instrument may be compared with the use of the new product as an instrument, as to the act which embodies the conceived product the apparatus is only a factor. There was probably a time when buildings had joints fastened by wooden pins. A defect in such a building might be traced to the joint. The defect in the joint might be traced to the wooden pins. The conception of an improved building might lie in the substitution in the building, of a metal nail for the wooden pin. Instantly it might be perceived by one skilled in the building art that such a nail would be much more valuable than the building itself, because of the in-

numerable uses to which a metal nail may be put. But as to the improved building, the metal nail had only the precise relation of the wooden peg; it was merely a factor in the production of the building. And wherever the nail should ever be used it would be only a factor in the production of the thing of which it formed a part.

The well-known case of Underwood et al. *vs.* Gerber et al., C. D., 1893, p. 340, presents a similar condition. The inventor wanted to improve the relation of carbon copy-paper to the public by lessening its cost or improving its quality. The known carbon paper was composed of tissue paper coated with a coloring material. This paper might be modified by modifying the tissue paper, or modifying the coloring material, or modifying the manner of applying the coloring material to the tissue paper. The inventor chose to modify the carbon paper by modifying the coloring material. His conception, therefore, was of a carbon paper having on it what he believed to be an improved coloring material.

He knew of no coloring material which would produce a carbon paper having the conceived qualities, and so it was necessary for him to conceive and embody a new coloring matrial. The mode of application of the coloring material to the tissue paper was the old mode, so that no conception was needed as to that art.

Thus the new carbon paper was a modified instrument, the tissue paper and the coloring material were parts of the apparatus employed, and the paper, the coloring material and the process of application were all only factors in the production of the new instrument. Whatever uses the tissue paper, the coloring material or the process may have had in other relations in the arts, the relation of these things to the carbon paper was the same. They were all subordinate to the more complex instrument.

An art may be, indeed usually is, so developed that the conceived instrument belongs to a type of instruments known to have a variety of uses, which uses the inventor has in mind. Nitroglycerine may have been so invented. But nitroglycerine is of no use at all until it exerts one of its activities, and as to each of its activities, whether exercised in a projectile, in blowing up a stump,

or in stimulating the heart, it is only a factor cooperating with other factors to produce the desired act or instrument.

In the sense indicated, then, a product is "broader" than a process or apparatus concerned in embodying the product, and a process is "broader" than an apparatus concerned in its embodiment, because the things concerned in embodying the conception are only factors in the embodiment, and so are subordinate to the conception.

Also in the same sense, a product is "broader" than a process or apparatus concerned in making the product, because theoretically, a product may be made by more than one form of process or apparatus; and a process is broader than an apparatus for carrying out the process, because theoretically, a process may be carried out by more than one form of apparatus.

Thirdly, for the reason just stated, in our Patent Law a product is "broader" than a process or apparatus concerned in making the product because the law protects the product regardless of the factors concerned in making it; and a process is "broader" than an apparatus concerned in carrying out the process, because the law protects the process regardless of the factors concerned in carrying it out. It is the relation of a factor to the particular art or instrument in which the factor participates that dominates the phase of Double Patenting under discussion, as to that act or instrument, and not the capacity of the factor to participate in other acts or instruments. I think it will be seen that this distinction is not academic.

A conception such as has been referred to herein may apparently belong in either of three classes.

The conception may be such as occurs constantly in every day work, merely one of those ideas wholly within the ordinary skill of the conceiver, and capable of embodiment within that skill. It results only from the exercise of what Mr. Robinson calls the "initiative faculties," and is a natural manipulation of things within the "sum of information" of the conceiver.

Or, the conception may be of such nature relative to the precise "sum of information" of the conceiver, that as to that "sum of information," he exercises the creative faculty, and performs a genuine act of invention,

although unknown to him some one else has already performed the act.

Or, lastly, the conception may be of such nature relative, not only to the "sum of information" possessed by the conceiver but to the "total sum of information," that possessed by persons collectively, that not only has an act of invention been performed, but is performed for the first time. Its embodiment has added to the "total sum of information."

In the first case there has been no act of invention; in the second case the inventor was not "the original, first inventor"; in the third case, the inventor is the "original, first inventor." I think it is the condition of the second case which has led to the test in section 4886, which implies that a person can not obtain a patent because he has invented something, but the invention must be "not known or used by others before his invention thereof," etc., and that has led to the requirement in section 4888 that the inventor "shall particularly point out and distinctly claim the particular improvement or combination which he *claims* as his invention or discovery"; that is, he shall definitely state the extent of the monopoly to which, from his "sum of information," he believes himself entitled; later sections of the statute direct the Commissioner to "cause an examination to be made" to determine the extent of the monopoly actually due to the inventor in view of the "total sum of information" assumed to be possessed by others.

Most patent systems have been devised to protect only the results of conceptions of the third class, those the results of which add to the "total sum of information." From these productions the various systems select certain acts and instruments as worthy of reward by monopoly or otherwise, and certain definitions are formulated in the laws or in the practice of the laws within which definitions rewarded inventions must fall. Our own system collects all acts in the term "art," and divides instruments into machines, manufactures and compositions of matter.

We may now consider the bearing of all this on the phase of Double Patenting under discussion, which

phase is concerned, as has been stated above, with the presentation by the same party of a plurality of applications with the same precise disclosure but with different claims. For convenience the plurality considered will be two.

Both applications may disclose a generic idea, either a product or a process, and a specific embodiment of the generic idea; or they may disclose a product and a process or apparatus for making the product; or a product and a process of using the product; or a product or process as a combination, and an element or subcombination product or process, which is a part of the combination; or a process and all or a part of the apparatus for carrying out the process. And one application claims one of these disclosures and the other application claims the other of the disclosures.

I believe the problems involved may be most easily solved if the things defined in the respective claims are considered as *different things* bearing a certain definite relation to each other, the study of which relation will determine the proper course of action; instead of calling these things the same by using such expressions as "the same invention," and other expressions which appear in the decisions to be quoted. That is, to consider as different things, a generic idea and its embodiment; a product and the process of making or using the product, or the apparatus for making the product; a combination, and a part of the combination, a process and the apparatus for carrying out the process, or a part of such apparatus.

Manifestly, any language which will most clearly define the problem and point to its solution is préferable to language which because it has no rigid definition, may obscure the problem and its solution. Especially would this seem to be the case if a single definite expression and a single clear line of consideration can be applied to all forms of the problem.

Of the different statutory classes a machine, manufacture and composition of matter are products; an art is a process.

As implied above, inventions may be claimed as: products, processes for making products; processes of

using products; combinations and elements or subcombinations; apparatus for making products; processes per se; apparatus for carrying out processes; parts of such apparatus.

The deductions in this paper are based on the belief stated above, that a product is "broader" than a process or apparatus for making the product, that a combination product or process is "broader" than an element or subcombination therein, and that a process is "broader" than an apparatus for carrying out the process or a part of such apparatus.

That is, a thing conceived is "broader" than the means for reducing the conception to practice.

The grant of a patent gives to the grantee, in terms, the exclusive right to make and use (and vend) the "invention." In the case of a product the grant appears to be actually to the exclusive right to make and use (and vend) the product, as the grant states; while in the case of a process the actual grant appears to be the exclusive right to carry out the process (and to vend that right).

A patent being granted as a reward for the disclosure to the public of a (patentable) invention, to be used by the public at the pleasure of the grantee, the grant ultimately to pass to the public, it follows that the information furnished in the patent only, or such information plus what is already known, must be sufficient to enable the public, represented by one skilled in the art concerned, to exercise all the privileges of the grant; comprising in the case of a product, the capacity to make and use the product; and in the case of a process, the capacity to carry out the process.

It is usually the case that one skilled in the art can make and use the newly discovered product without the disclosure in the patent of any process or apparatus for making the product, or of any process of using the product. And it is frequently, perhaps usually, the case that a newly discovered process can be carried out by hand in known ways or by known apparatus.

But it may happen that the extent of the known art is so meagre that *the only known ways to exercise one or more terms of the grant are those disclosed in the applications for the patents.*

This would be the case:

1st. When the applications disclose a generic idea, involving either a product or process, and embodied, "reduced to practice," in a single species. Because, the generic idea being new the known art can contain no specific embodiment of it.

2d. When the applications disclose a new product and a process of making the product, and the disclosed process is the only process by which one skilled in the art can make the product.

3d. When the applications disclose a combination product or process and an element or subcombination which participates in the combination and the combination can only be made with the disclosed element or subcombination.

4th. When the applications disclose a process and an apparatus for carrying out the process and the disclosed apparatus is the only one known by which the process can be carried out.

5th. When the applications disclose a process and a product forming part of the apparatus for carrying out the process, and the disclosed product is the only one known which can form such part of the apparatus.

Now, under all the conditions just referred to it would be impossible *at the time of the grant,* to exercise all the rights of the grant excepting by the means disclosed in the applications themselves; and, so far as concerns Double Patenting, the Office in granting a patent, *should consider only the conditions existing at the time of the grant, regardless of what may develop in the future as to new species, new processes, new uses, new combinations, or new apparatus.*

It is believed that failure to emphasize this last condition has resulted in a certain amount of injustice to applicant's and to the public.

It has been stated above that a product is theoretically "broader" than a process for making the product, or an apparatus for making the product; that a combination is "broader" than an element subcombination, and that a process is theoretically "broader" than an apparatus for carrying out the process.

If, therefore, two applications vitally related to each

other as above stated should be presented to the Office by an applicant, one application claiming the "broader" invention and the other application claiming the "narrower" invention, and patents should be granted on both applications, Double Patenting would result. But, I believe—and this is the basis of the procedure outlined in this paper as preferable—that the resulting patents would not be for "the same invention," but that the grant in the "narrower" patent would be only a *repetition* of a *part* of the grant in the "broad" patent; and being so, would be a *superfluous* grant to the patentee since he is given the "broad" patent.

A simple example is the grant of a patent for a product and the grant of a patent for the only known process of making the product. The grant for the product gives the exclusive right *to make the product and to use* the product. The grant for the process gives the exclusive right to carry out the process. But the process makes the product. Thus the process grant merely *repeats* the grant in the product patent to the exclusive right to *make* the product.

That also, if later the respective patents should be owned by different parties, there would *be vital conflict between the two patents*; for the reason that the owner of the "broad" patent *could not exercise all the privileges in the "broad" patent without infringing the grant in the narrow patent.*

Further, even though the two patents if issued might always be owned by the original patentee, if either one of the patents should issue before the other, the second patent, although it could add nothing to the information already given to the public in the first patent; would extend the actual monopoly beyond seventeen years.

This last condition is the one most recognized in the Office and the courts, and has furnished most of the decisions on the subject.

I believe the following principle is correct.

> It is the intent of the Patent Law to avoid the grant of two patents varying in scope, when it would result that there could be no possible exercise of all the provisions of the grant in the

> patent of "broader" scope without the exercise of the grant in the patent of "narrower" scope.
>
> And this condition applies, whether the inventions disclosed are in the same statutory class or in different statutory classes; whether the applications are presented by the same party, or by different parties; and whether the applications are pending concurrently, or at different times.
>
> Further, the conditions existing at the time of the grant are the only conditions to be considered.

If this principle is correct the obviously proper procedure is to examine the "broader" application without reference to the "narrower" application. The question of patentability of the "broader" application having been determined, the "narrower" application would be examined without reference to the "broader" application. If both applications were considered allowable separately, the two applications would then be compared to determine the question whether Double Patenting would result if both applications should be allowed to become patents. The test as to this question has been outlined above.

If Double Patenting would result both patents obviously, should not issue. The preferable practice, I think, under this condition would be to compel, or at least suggest to, the applicant to choose the "broader" application for his patent, and for reasons to be stated later, it would be still better practice I think, to suggest that the applicant transfer his "narrower" claims to the "broader" application and take out a single patent with both sets of claims.

Consideration of the Office practice of record will, I think, show that consciously or unconsciously such applications have been compared with the art jointly instead of separately, and that their relation to each other has been defined by the use of various indefinite terms which imply that the two things are the same, or ought to be the same, or at least are unpatentably distinct things.

We may consider the various forms of the problem in the order of their arrangement above.

SAME STATUTORY CLASS.

First. The presentation by the same party of two applications disclosing either a product or a process, the two applications having the same disclosure, one application claiming the genus, i. e., the generic idea, and the other application claiming the species, i. e., the specific embodiment of the generic idea.

This condition has been often considered, especially in the Office. Double Patenting under this condition has seldom arisen in the courts because the Office has refused two patents if Double Patenting would result. The reason for refusal has assumed various forms. So early as 1884, Ex parte Holt, 29 O. G., page 171, discussed the question and decided that "the applicant has invented the subject-matter of a narrow claim upon a certain entity and in the same moment of time and as the same sense-concept he has invented the matter of the broader claim," and that therefore "he should not have two patents for the same thing."

This is not believed to be an accurate point of view. It is believed that ordinarily, indeed, perhaps invariably there has been a conception of the generic idea, and that the specific embodiment is only the reduction to practice of that idea.

Ex parte Roberts, 40 O. G., 1887, C. D., 573, year 1887, said:

> "Where the invention is one, integral and indivisible, whether it relates to different parts of a single organization or combination, or process and product, or genus and species, a prior patent which claims or covers part of the whole invention, in legal contemplation, takes the whole invention out of the field of patentability, whether the subsequent applicant be the original patentee or some other person."

This decision extends the idea of the "same invention" beyond genus and species and states that even process and product may be one "integral and indivisible" invention.

Ex parte Mullen and Muller, 50 O. G., 837; C. D., 1890, says as to such a condition, "the lines of division

exist as mental figments only and have no corresponding existence in the concrete subject of invention." This was apparently intended to apply to genus and species, product and process, and process and apparatus. Numerous later decisions have stated the same substantial subject-matter in equivalent terms.

As a variation of these views the court, in Western Electric Co. *vs.* Williams-Abbot Electric Co., 108 F. R., p. 952, said in considering Double Patenting of genus and species:

> "The Gray patent, 309,617, for improvements in telephone call boxes, which claims broadly 'means' and 'mechanism' for automatically breaking and holding open the short circuit during the operation of signalling, the specific device therefor, invented by the patentee, being disclaimed and made the subject of a separate application, is void as to all three of its claims, in view of the disclaimer, which takes out of the patent all that was patentable in the invention, leaving it merely the equivalent of a claim for a function."

What confusion may result from the use of the indefinite word "function" is shown by the conclusion of the court that the *specific* embodiment contained "all that was patentable," whereas the invention was so broad that, apparently, except for the existence of the species patent, the genus patent would have been sustained. This same apparently erroneous idea occurs in the consideration of process and apparatus referred to later in this paper.

Is not the simple procedure outlined above preferable, especially as no indefinite term is needed in defining the issue?

DIFFERENT STATUTORY CLASSES—PRODUCT AND PROCESS.

Now, suppose an applicant presents two applications with the same disclosure, but of things in different statutory classes, the things being a product and a single process for making the product, one application claim-

ing the product and the other application claiming the process.

The relation of a product to the single known process for making it was quite fully discussed in the Office decision, Ex parte Trevette, 97 O. G., p. 1173, and numerous decisions were cited. It is a very interesting case. The applicant disclosed a novel stitched signature seam and a process of making the seam. The Board of Examiners-in-Chief said: "The applicant must have first conceived of the stitched-signature seam. That conception of the new seam was the conception of the entire invention before us. It was the conception of a new and useful article, or part of an article." In a minority opinion from the board it was stated that if the invention "is for subject-matter properly claimable as a process and new and useful, on what ground is it rejected?" and granting that had he made a claim for an article of manufacture "his invention would have been covered. I see no legal reason for refusing the applicant all protection for his invention because he, unwisely perhaps, choses what the Patent Office considers an improper and ineffective way of claiming it."

The Commissioner stated:

> "When the invention is not properly claimable as a process, it is the duty of the Office tribunals to so hold if they be of that opinion. I do not think that the Patent Office should issue a patent containing claims which on their face purport to cover one statutory class of invention when the invention which they do cover in fact belongs to another statutory class."

And, again:

> "A process which amounts to nothing more than the necessary or obvious manner of effecting the production of the article is not patentable."

Also:

> "It is evident, therefore, that the law is well settled on the point that a process which amounts to no more than the mere function of a machine is not patentable. As a corollary to this propo-

> sition it is equally true, as shown by the decisions, that a process which amounts to nothing more than the necessary or obvious manner of effecting the production of the article is not patentable.

At the time this decision was made, 1901, the Office and the courts were less liberal as to the necessary qualities of a process than they have since become—note, e. g., the recent Supreme Court decision in Expanded Metal Co. ét al. *vs.* Bradford et al., 143 O. G., p. 683, which declared a process of making expanded metal which was wholly mechanical to be a true process and the earlier view may have complicated the problem in Ex parte Trevette. But did the Trevette problem require for its solution any preliminary consideration other than whether the process disclosed was per se "an act or series of acts," whether it was useful and novel, and whether the claim was in the form of a process. If so, whether it was the duty of the Office, inasmuch as the applicant had also disclosed an apparently novel product, that is, a member of a "broader" statutory class, to suggest that the applicant present a product claim, or perhaps to compel him to do so; and then if the disclosed product could apparently be made only by the disclosed process, to see that the product and process claim did not issue in different grants.

In a later case, Ex parte Kilbourn, 221 O. G., p. 737, claims to both product and process were made in the same application. The decision said:

> "To some tribunals these process claims might, and probably would, express the invention better than the article claims, whereas to others the article claims may express the invention best."

If the theory of this paper is correct, this quotation does not, I think, state the problem in the best form, the only questions being: Is the disclosed process a true process? Is the product patentable? Is the process patentable? Can the product be made by any other process than that disclosed? If it can not, then even if both product and process are separately patentable, claims to the product and claims to the process should be allowed only in the same grant.

Both Ex parte Trevette and Ex parte Kilbourn, etc., concern only one application, but the relation of product and process in them presents a problem so similar to that when the respective claims are presented in separate applications, that what is believed to be the best solution when such claims are presented in different applications is thought to be clear.

In the old case, Mosler Safe and Lock Co. *vs.* Mosler, etc., 43 O. G., 1115, however, the Supreme Court considered a product patent and a separate patent for the only method disclosed for making the product and said:

> "After a patent is granted for an article described as made by causing it to pass through a certain method of operation to produce it—as, in this case, cutting away the metal in a certain manner, and then bending what is left in a certain manner—the inventor can not afterward on an independent application, secure a patent for the method or process of cutting away the metal and then bending it so as to produce the identical article covered by the previous patent, which article was described in that patent as produced by the method or process sought to be covered by taking out a certain patent."

This quotation implies that only one process was disclosed or apparently possible. If so, the process grant seems merely to have repeated a part of the product grant. But if the mere disclosure of the product was sufficient to enable one skilled in the art to make the product by a process patentably distinct from the process disclosed, the disclosed process was only a preferred method; and inasmuch as the product could in such case be fully made without recourse to the disclosed process, there would be no conflict between the grants, or a prolongation of the product monopoly.

It may be thought that, even though the product, e. g., A, could be made by only one process, if it should happen that that process could be used to make a variety of patentably distinct products, e. g., A, B and C, by operating on different materials, separate valid patents could be issued on the product A and on the process,

since the process could be used without making product A. This test is, indeed, occasionally emphasized in patent practice. But the allowance of separate grants would seem to be incorrect if either monopoly could be extended beyond the seventeen years of our system. And such extension would apparently occur if the two patents were not issued at the same time. For if the process patent should issue, e. g., three yeas before the product patent, the process patent could be used to make the product A as well as any other product, so that a monopoly of the product A would be held for three years before the product patent issued, since there would be no other way to make the product. The product patent would protect the product monopoly for seventeen years from its grant. So that if both patents would be valid there is a monopoly of product A for twenty years. If, on the other hand, the product patent should issue, e. g., three years before the process patent when the product patent had expired, the public could not make it without using the only known process and thus infringe the process patent for three years, unless a second patentably distinct process for making the product should be discovered during the life of the product patent. But the Office is confronted with the condition existing at the time of the grant.

Further, if both patents should be granted and should be afterwards separately owned, the apparent anomaly would exist of the owner of the product patent being compelled to pay royalty to the process patentee, while the process patentee need not pay royalty to the product patentee if the process were used to make another product.

PRODUCT AND APPARATUS.

Next, an applicant might file two applications disclosing a product and an apparatus for making the product, one application claiming the product and the other application claiming the apparatus. This condition should receive the treatment outlined above. The condition is, however, almost hypothetical, since ordinarily the process, as a member of a statutory class intermediate the product and apparatus would be claimed also, and the problem assume a different aspect.

A COMBINATION PRODUCT, AND A PRODUCT OR PROCESS ELEMENT OR SUBCOMBINATION FORMING PART OF THE COMBINATION PRODUCT.

In Division 39 a patent was granted for a specific form of packing-ring to be used as a part of a pipe joint. Subsequently an application was filed for a pipe joint comprising this specific ring. Apparently the inventor did not recognize that he had conceived a pipe joint to remedy an assumed defect in pipe joints; that he had reduced the conception of the joint to practice by a process of forming the joint; and had devised a packing-ring as part of the apparatus for carrying out the process. So, perhaps, deciding that because of the possibility that his ring might have uses in other forms of joint, he was getting his best commercial protection by his patent to the ring, he procured such a patent. But the improved joint could not be made without the specific ring. If a patent had first been granted on the joint which was in reality his "broader" invention, a separate patent to the ring would repeat a part of the grant in the joint patent, the right to use the ring being included in the right to make the joint.

His apparently correct course would have been to present a claim to his joint and a claim to his ring in one application. Such a patent would have protected the joint, and also would have protected the ring as to any uses of the ring independently of the joint.

Inasmuch as he first took out the ring patent, a later grant to the joint would have prolonged the monopoly of the joint. Applicant was in the position of one who has invented a process and is allowed by the Office to patent the only apparatus which will carry out the process, the apparatus per se being patentable, and has later filed an application for the process.

The "joint" patent was therefore refused, although the applicant contended that if he had claimed the joint and the ring in one application in any other of the forty or so Divisions of the Office, division would have been required. He also compared the Examiner of Division 39 to the juryman who was pained to see how obstinate

the other eleven members were in not accepting his view. The "joint" application became abandoned.

The Underwood et al. *vs.* Gerber et al. case, discussed above, is another example of the same condition.

Similarly if it should be discovered that a material not before known as capable of being engraved had such capability, the discovery might be patentable, the process might be new or old, and it might require an additional act of invention to produce a tool capable of doing practical engraving work on the material. It might be recognized by one skilled in the art that the newly invented tool would be useful in a wide variety of engraving. Nevertheless, if the new engraved plate could be produced only by the new tool, separate grants to the plate and tool should not be given.

PROCESS AND APPARATUS.

Next, assume that an applicant presents two applications disclosing an alleged process and a single apparatus for carrying out the process, and one application claims the process and the other application claims the apparatus.

This form of the problem appears to have produced the most decisions with the greatest variety, of reasoning or situation, and is clearly the most interesting.

A process in the sense of the Patent Law has been repeatedly, and apparently accurately, defined as, "A series of steps performed on subject-matter to transform it into a different state or thing."

The Patent Law states simply and clearly the requirements for the issue of a process patent. An operative process must be disclosed. If one skilled in the art needs no direction as to the ways for carrying out the process, the disclosure of the process alone is sufficient. If, however, one skilled in the art has not the required knowledge, such knowledge as one skilled in the art does possess must be supplemented by sufficient disclosure in the application to enable the process to be carried out. The statute even then requires a disclosure of only one way to carry out the process and does not specify the form, but demands only sufficiency.

But suppose the forces necessary to perform some or

all of the steps are greater than the forces available in the human or other animal body, even if these bodily forces are transmitted through tools. Recourse must then be had to mechanism capable of receiving and transmitting in a predetermined manner forces greater than can be supplied by man or animals. This mechanism is ordinarly called a machine.

But this condition appears to be wholly incidental, indeed almost accidental, and not to affect the actuality of the process, which may be none the less a "series of steps performed on subject-matter," etc.

Suppose under this last condition, the mechanism condition, there is only one machine known in the art for carrying out the process, or no such machine is known in the art, and the application discloses only one such machine, and this machine is then the only one available in the art. In what way has the applicant failed to comply with the statute so far as concerns the disclosure in a process patent? Further, if the process claim presented in the application avoids known art and is free of interference in the Office, on what grounds can a patent be refused? And what has the existence of a claim to the disclosed apparatus either in the same application or in any other application to do with the applicant's statute-given right to an allowance of his process claim? Is the primary question any other than whether the thing disclosed as a process is in fact "a series of steps," etc.?

Why should the accuracy of the definition of a "process" depend on the number, or the nature of the ways in which the process may be carried out?

Therefore, given the condition stated above, of a single applicant presenting two applications with the same disclosure, of a process and a single apparatus for carrying out the process, one application claiming the process and the other application claiming the apparatus, is it any more than simple justice to the applicant to examine each application as to its form and merits as if the other application did not exist, and, if each application is found per se to be allowable, to determine whether the process can apparently be carried out in any other way than by the single mechanism disclosed, and if not, to inform the applicant that he can not have

claims to the process and to the apparatus in separate grants?

As to process and apparatus, some inventors seem to me to have received unjust treatment, based on vacillating and indefinite decisions, the cornerstone of which appears to have been, and appears still to be, the terms "Function of the Machine."

In 1887 the Commissioner's decision, Ex parte Herr, 41 O. G., p. 462, discussed this branch of the problem of Double Patenting, and deduced the following, as stated in the syllabus:

> "A method or process such as the law recognizes as patentable must have an existence independent of the machine or apparatus by which it is carried out to a result. It must be a method or process that *can be carried out by hand or by various kinds and forms* of mechanism or apparatus. If the act or result is simply that of the mechanism itself so related to it that it can not exist independently, and is the sole utterance of the machine, the supposed method or process *does not exist.* The function of a machine can have no separate existence, and is completely and sufficiently covered by a patent for the latter."

From this condition and others stated in the decision, it was concluded that:

> "It must be regarded as settled by the very highest authority that an apparatus and a process *are separate and distinct inventions.* There is no requirement of law that they must or ought to be comprehended in a single patent, while there are many reasons why they should not be. A claim for a machine or apparatus and a claim for a process should be prosecuted in separate applications, and each when allowed, comprehended in separate patents."

These principles and Rule 41 prevailed in the Office until set aside by the Supreme Court in U. S. *vs.* Stinemetz, in the year 1904, 109 O. G., p. 549. In this decision the honorable court used the semi-magic term, "Function

of the Machine," by that time fully established, to define an apparently new form of blood relationship between the unfortunate process and apparatus, as follows:

> "They may be completely independent. But they may be related. They may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus. In such cases the apparatus would be the dominant thing. But the dominance may be reversed, and the process carry an exclusive right, no matter what apparatus may be devised to perform it."

That is, an apparatus may, under some conditions, "dominate" a process, although a process is a member of a "broader" class than the class to which an apparatus for carrying out the process belongs. I don't believe it, in spite of the high source of the utterance.

So the Circuit Court of Appeals in Ball et al. *vs.* Caker et al., 210 F., 278:

> "A process may be patentable, although a mechanism is necessary in carrying it out, and the mechanism may or may not be new or patentable; but a valid patent can not be obtained for a process which involves nothing more than the function of a machine."

Again, in re Tallmadge, 174 O. G., p. 1219, the court said:

> "To constitute such an art it must be capable of producing a beneficial result without the aid of any *particular* mechanism, for where the process is simply the function or operative effect of the mechanism it is not invention but at most the result of one."

This seems to mean that if a series of steps on subject-matter can be carried out by hand or by either of two different mechanisms it is a "process"; otherwise no "process" has been invented but only a machine.

In re Rowe, 192 O. G., p. 195, the court quoted the Commissioner as saying—

> "There can be no doubt that a process and an apparatus for carrying it out may be and very frequently are separate inventions and they may be more or less closely related depending upon circumstances. But it is also true that in many instances where a single invention of a broad nature has been made, there is an attempt to cover the invention by both process and apparatus claims."

The court continued:

> We concur in this statement. An invention is not made different by the mere fact that one is disclosed in a claim for an apparatus and the other one in form of a method or process. "Where one invention is disclosed, but one patent can issue," citing In re Crevaling, 117 O. G., 1167.
>
> In re Crevaling just referred to called the process and apparatus the "same inventive concept."

The cited cases are only examples of many.

How kaleidoscopic the relation of process and apparatus may be made is shown by a curious swinging of the pendulum to the other extreme.

The belief is stated above that in considering Double Patenting the Office should confine its attention to the matter of the application presented, and to the known art. That the problem should be solved without reference to things which may be discovered after the patent or patents are granted. The Office is confronted with a condition and not a theory.

The decision in Century Electric Co. *vs.* Westinghouse Electric Co., 191 F., p. 350, ignored this condition. Division was required in the Office and separate patents issued—one for the process, the other for the apparatus. Contention was made in court that the patents were for "the same invention." It seems to have been agreed

that no other apparatus was known for carrying out the process. Nevertheless, the court said:

> "Moreover, it is probable that an apparatus will be invented which is not the mechanical equivalent of that patented. And the patentee is entitled to the protection of his process against its use by such a subsequently invented machine, and also to protection of his apparatus against its infringement by its mechanical equivalent. Hence, the patents for the process and for the machine by which it may be practiced are not for the same invention, and neither was rendered void by the other."

On this is based the syllabus:

> "Separate patents for a new and useful process and for a new and useful apparatus to practice it may be sustained, although no other apparatus to practice it is known, and although the apparatus can not be used without practicing the process."

That the problem is not properly solved in the way indicated seems clear from the fact that if both patents issued to A, and A should assign one of the patents to B, or should assign one patent to B and the other to C, the owner of the "broad" patent, that to the process, could not exercise the privilege of his grant which gives him the exclusive right to carry out the process, without being in vital conflict with the "narrow" patent which grants the exclusive right to make and *to use* the apparatus.

As to the Function of a Machine, assume that a person from the study of the properties of aluminum discovers a new method of operating on aluminum blanks so as to produce four aluminum cans of a specified type in the time hitherto required to produce one can. According to Robinson's theory in his work on patents, the discovery is of a hitherto unknown susceptibility of an old object, i. e., an aluminum sheet, to a new "mode of application" of a force. Investigating the art for means to carry out the process the inventor finds that a machine already in use for forming paper vessels will,

without change, carry out the process. He does not need, therefore, to perform an additional act of invention to devise an apparatus. Unfortunately for his immediate future as an applicant this known machine is the only one capable of performing the process. He applies for a patent.

Even though the Office acknowledges that he has made a discovery amounting to invention because the properties of paper and aluminum are so different that one skilled in the art would not recognize that the series of steps performed on the paper blanks would be feasible on an aluminum blank; nevertheless, the process must be carried out by a machine, and there is only one machine known which can carry it out. Therefore, if the court practice and language above outlined is to prevail, the alleged process is but a "function of the machine"; the process and machine are "one," "integral," "indivisible invention"; the "same sense—or mental—concept," etc. In short, the discovery appears to be not industrial but rhetorical. There is somewhere a Commissioner's decision to the effect that the applicant's path should be "strewn with roses." The immediate applicant's path appears to be strewn with flowers of speech. When a person makes two blades of grass grow where one grew before he is rewarded by the increased output, and honorable mention in essays as a hypothetical case. The inventor of a process for making four aluminum cans grow where one grew before must be satisfied with the increased output alone, because his new process could only be carried out by machinery and by only one form of that.

In the preparation of this paper, the idea occurred that perhaps Mr. Robinson has touched on this particular form of the problem, namely, the precise relation of process and apparatus to each other and to the art. It is treated most exhaustively in nearly ten pages of footnotes, beginning on page 233 of vol. 1.

I believe that if the pracice as to process and apparatus should conform to the principles there advanced, the inapt and inadequate terms cited above, including the high-sounding and perhaps psychologically interesting but vague "utterance of the machine," "sense-concept,"

and "mental-concept" would speedily find their proper and permanent resting place in oblivion, so far as concerns Double Patenting. Earlier in his work Mr. Robinson says that the act of inventing is founded on certain "essential and imperishable truths." The following quotation from this discussion of "process" appears certainly to state one of such truths:

> ". . . The forces of laws of nature and the susceptibility to them of the objects named existed, not by the creation of the inventor, but by the act of God. When the inventor discovered that the latter were capable of being influenced by the former with certain results, and devised a series of operations by which these influences might be brought to bear on these objects, *his conception of the method or process was complete, although no idea of the particular utensils or instruments to be employed had been presented to him.* The reduction of this method to practice, by selecting suitable apparatus or mechanism for carrying out this method, would be, so far as this invention was concerned, the work of the constructor, not of the inventor, *and if the apparatus were wholly new and original with him, yet its relation to the method devised by him would be the same.* As mechanism and apparatus it would be a new invention, but with reference to the method it would still be mere reduction to practice. In every case of invention a method and an instrumentality for employing that method must exist. Where the method is new, it is patentable as a process. Where the method is old and the instrumentality new, the latter may be patented as a machine, a manufacture, or a composition, according to its form. But the method is never the natural force, nor the natural object, nor the instrumentality, but has a distinct legal existence, and if possessing the other necessary requisites is a patentable subject-matter."

Why does not this principle apply equally well to genus and species, product and process, etc.?

PROCESS, AND A PART OF THE PROCESS OR A PART OF THE APPARATUS FOR CARRYING OUT THE PROCESS.

In Division 39 an application was filed disclosing and claiming a method of stopping boiler leaks, which consisted in a specified series of steps of applying a specified compound to the leak. The search disclosed a patent granted to the same person in Division 15 for the specific leak-stopping compound.

The process could not apparently be carried out without the use of that specific compound as part of the apparatus. The inventor may have acted on the same plan as the inventor of the joint and the packing-ring mentioned above, and have thought that because the compound might have other uses than in the disclosed process, a patent to the compound might be more valuable commercially than a patent to the process; whereas, in the sense above defined although a product is "broader" than the process of making the product, a process of using the product is "broader" than the product used in the process, since a process is "broader" than the apparatus which carries out the process and so is "broader" than any part of such apparatus. In the immediate case the apparatus was made up of the compound and the boiler water, the process consisting of so manipulating the compound and the water as to apply the compound to the leak.

A grant to the process would have prolonged the process monopoly. The process patent was, therefore, refused.

A process and a part of the process should be treated in the same way.

There is, of course, possibility that more than two applications may be filed disclosing the same matter, such matter comprised in different statutory classes. There are a series of court cases involving a patent for a sewed shoe, a separate patent for the disclosed process for making the shoe, and a separate patent for the apparatus to carry out the method. The three patents were granted at different times. There are about as many views of the problem as there are decisions. The latter are scattered

through the early O. G.'s and Federal Reporters. At this distance the problem appears to be only to determine whether the shoe could be made by any other than the disclosed process, and whether the process could be carried out by any other than the disclosed apparatus. If the two answers are in the negative, claims to the product, process and apparatus should have been allowed, if at all, only in the same grant.

I believe if a person should invent a composition, and the only use for the composition should be as a brick, and the brick could be made only by the process disclosed and the process could be carried out only by the apparatus disclosed, and the composition, the brick, the process and the apparatus separately avoided known art, that the inventor should have in one grant a claim to each of these things.

There appears to be a growing disposition in the Office to reject one claim on another in the same grant. I think this is a bad habit in connection with a system in which anticipation is by mechanical equivalence, instead of by technical equivalence as in England and Germany; and I think that, at least, in cases such as have been considered in this paper where a member of a "broader" statutory class can only be reduced in practice by a single disclosed member in a "narrower" class the allowance of claims to both members in the same grant is proper. The claim to the "narrower" member is at most only superfluous to the patentee and its existence may enable the patentee to sue a person as an actual instead of as a contributory infringer. Thus, if a patent has a process claim and has also a claim for the only known apparatus to carry out the process, the patentee can sue the maker or possessor of the concrete thing, the apparatus, as an actual infringer.

Also, and this seems to me quite important—as shown by the examples of the packing-ring, the sealing compound and the engraving tool noted above—a "broader" member may be so related to a "narrower" member that claims to the "narrower" member should not be allowed in a grant separate from the "broad" grant; yet the "narrower" member may have many capabilities outside its relation to the "broader" member disclosed. And

a claim to the "narrower" member would, of course, protect it as to all its uses.

Still further, although a claim to a genus fully protects the patentee as to infringement through any species under the genus, and a claim to the species disclosed is superfluous, it is invariably allowed. Yet the relation of product and process, and process and apparatus, combination and element or subcombination, may be no different than that of genus and species. It may be contended that the practice as to genus and species exists because a genus is intangible. But so is a process.

In some places above it has been stated that it be suggested to the applicant that he claim his invention in its broadest form, or that he be compelled to claim it in its broadest form. I believe that an inventor has the legal right to dedicate to the public a part of the monopoly to which he is entitled as fully as he has the legal right to dedicate all of his monopoly, and that therefore the Office should only inform the applicant of the extent of the monopoly to which he is entitled, and if he deliberately chooses to limit his monopoly unnecessarily, the Office should allow him to do it, and should not compel a broader claim.

DIVISION.

It will be seen that this phase of Double Patenting extends to practice in requiring division. Obviously, if two things having to each other the vital relation set forth above are claimed separately in the same application, if division is required or permitted, at least separate patents should not issue. The relation falls under the first class in Ex parte Mullen and Mullen above. If such relation does not exist, the second or third class in Mullen and Mullen applies.

INTERFERENCE.

Further, this phase of Double Patenting extends to interference practice.

When two applications are presented by different parties, one application claiming the "broader" member

and the other application claiming the "narrower" member, and the vital relation stated above exists between the applications, the "broader" claim should be suggested to the "narrower" application. The losing party to the resulting interference should be allowed no claim to either the broad or narrow matter.

MECHANICAL AND DESIGN PATENTS.

Still further, this phase of Double Patenting may apparently be concerned with a relation between mechanical and design patents.

A mechanical device has certain capabilities as a useful instrument. Ordinarily these capabilities may all be exercised by the device without vital dependence on any particular exterior shape or surface configuration. But it is possible that the peculiar mechanical capabilities of the device may be in part or even wholly dependent on its exterior shape or its surface configuration, and for that reason these capabilities are embodied in part or wholly in a specific visible design.

A mechanical device is, therefore, "broader" than an exterior design of the device, since theoretically it may exercise all its capabilities and yet be embodied in more than one exterior design.

The Office grants not only mechanical patents on devices but also patents for designs of such devices if they satisfy certain tests of the law relating to designs.

If, therefore, an applicant should file two applications disclosing devices having the same exterior appearance and one application should claim the device as a mechanical device, and the other application should claim the "design" of the device, and the mechanical device and its "design" considered separately should be patentable, comparison of the mechanical capabilities of the device should be made with its "design," to determine whether this probably rare, but clearly possible, vital relation exists between the two features. If it does exist, both patents should not be granted, because of the principle advanced repeatedly, perhaps monotonously, above; since the "design" grant would be superfluous as a repetition of the "broad" grant; also because if both patents were granted, and should afterwards have different

owners, the owner of the "broad," i. e., "mechanical," grant could not exercise the full privilege of his grant without infringing the "narrow," i. e., "design" patent, and further, because if the patents were granted at different times the monopoly of the "broad," i. e., the mechanical grant might be extended.

The applicant should be allowed only the mechanical patent, i. e., the broadest expression of his invention, or, at least, it should be suggested to him to choose the "broad" grant.

Further, if two such applications should be filed by different parties the practice should provide that it should be suggested to the "design" applicant that he file a mechanical application. After the interference no patent at all should be granted to the losing party.

It will be seen that if two parties are in interference on applications with mechanical claims, and it happens that the mechanical capabilities of the disclosed device are vitally dependent on its "design," a third party, or indeed one of the contestants in the interference might file a "design" application, and procure a patent which during the common life of the "design" patent and the mechanical patent resulting from the interference, would be in conflict with the patent issuing from the interference, unless the "design" patent were secured by the party who afterward won the interference, in which case the design patent would be superfluous.

The suggested practice, however, would not be based on the majority of decisions which have discussed mechanical and design patents with the same disclosure. See the ex parte decisions: Palmer, 21 O. G., page 1111; Lunken, 76 O. G., page 785; Jones, 84 O. G., page 12181; Klenim and Schreiber, 218 O. G., page 603.

It seems curious that certain decisions have chosen the most emphatic language to state the intensity of the vital relationship possible between two mechanical or chemical members even though they are in different statutory classes, and that almost equally emphatic language is used in mechanical and design decisions to state the impossibility of a vital relation between two properties of the same member. "What is truth?"

The decision Ex parte Schulze-Berge, 42 O. G., page

293, on the other hand, stated the true test, I think. It reads:

> ". . . the applicant claims that he has invented a plate-glass which is useful, because while it admits a great quantity of light it practically excludes vision. It is true that this function of the glass depends upon the peculiar manner in which applicant gives form and shape to one of its surfaces, which he claims may be made irregularly and without any design whatever, or it may be made in forms which would be pleasing to the eye, such as designs of figures, but when so made such configuration is a mere incident to the purpose for which the plate-glass is constructed."

That is, the applicant had really reduced his conception to practice in two patentably distinct configurations, and one of the configurations was a "design" within the meaning of the law. The privileges of the mechanical patent could be fully exercised without recourse to the "design."

The court case: Williams Calk Co. *vs.* Neverslip Co., 136 F., 210, stated the apparently proper conclusion that such vital relationship may exist between the mechanical capabilities of a device and its exterior configuration, and mechanical and design patents should not both issue. The device was a horseshoe calk, and apparently the mechanical capabilities of the calk could not be exercised in a calk of another exterior shape.

A perhaps clearer example of such vital relationship is the tread of an automobile tire. It may easily occur, perhaps, indeed, is usually the case, that the mechanical capabilities of the tread can not be exercised except through the precise exterior configuration of the tread, and such configuration may form such a design as falls within the Design Law.

Further, even if the mechanical capabilities of a device are vitally dependent on a part of its "design," still both patents should not issue. The relation is the same as between, e. g., a process and a part only of the apparatus necessary to carry out the process.

Of course, if the conception of a thing can be reduced to practice within the art, and the conceiver invents a reduction patentably distinct from the known art, a patent may issue on the broader member and a separate patent on the invented embodiment of the reduction. Also, if the conception can not be reduced within the art and the conceiver makes two patentably distinct reductions to practice, a broad patent may issue claiming the thing conceived and also one reduction, and a separate patent may issue on the other reduction. This is in harmony with the familiar "genus and species" practice.

The various forms of the problem considered in this paper do not arise often, but the solution suggested may be perhaps likened to the traditional "gun" in Texas, which was seldom needed, but in case of need should be "immediate" and convenient, familiar to the user and easily and accurately discharged.

On the other hand, the problem concerns various parts of the patent system, and so the principle is perhaps to be classed with those things that are "important if true."

I am not sure of the truth of the principle. It was put in practice several years ago in Division 39 with some fear and trembling, because no exact precedent could be found for the precise point of view. But it has so far worked out very nicely with no apparent injustice to the inventor or the public. There have naturally been differences of opinion between the division and the applicant or his attorney as to the applicability of the principle in questions of fact; but it is gratifying to note that even when such applications have been prosecuted by attorneys of the highest standing, the validity of the principle itself has not yet been questioned.

February 8, 1917.

Res Adjudicata as a Ground of Rejection

A paper read March 18, 1914, before the Examining Corps of the United States Patent Office

by

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WASHINGTON, D. C.
1914

Res Adjudicata as a Ground of Rejection

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The question of Prior Adjudication in Patent Office cases may come before the Examiner in several different forms. It is a question which, more often than otherwise, he must raise and consider on his own motion.

The subject is not without difficulty even in ordinary legal procedure and in Patent Office practice the character of the rights involved and the intricacy of the proceedings further complicate the questions.

I shall not discuss the doctrine of *res adjudicata* broadly nor attempt definitions. A very clear statement of the doctrine in general may be found in the case of Nesbit *vs.* Riverside, 144 U. S., 610, a decision of the U. S. Supreme Court. Assuming a knowledge of these general principles I shall refer only to those phases of the subject which directly affect the Examiner's action on applications.

That the doctrine applies to Patent Office proceedings is now so well settled as scarcely to require citation of authority. This will affirmatively appear from a perusal of decisions cited below, notable among which, on this point, is the early decision of the Court of Appeals of the District of Columbia, *In re* Barratt's Appeal, decided in February, 1899 (87 O. G., 1075; 14 App. D. C., 255).

The simplest case of this nature in the Patent Office arises when a second application for the same invention as claimed in an earlier application is presented for examination—the earlier application having been finally disposed of as unpatentable. Such second application, can not, of course, be ignored; it must be acted upon. Furthermore, as was pointed out in the case of *Ex parte* Kenny (118 O. G., 2253), a decision by the Commissioner in 1905, it requires some examination to determine

that it is for the same invention as a prior case; but having found this to be true, that alone constitutes a sufficient ground for refusing the patent. In ruling upon this point in the Barratt case, above cited, the court said:

> In what we have said we do not desire it to be understood that the Patent Office may not, if it thinks proper to do so, entertain and adjudicate a second application for a patent after the first application has been rejected. What we do decide is, that it is not incumbent upon the Office as a duty to entertain such applications, and that, if it refuses to entertain them, it has a perfect legal right to do so. An applicant is not legally aggrieved by such refusal.

This view had been taken by the Office long prior to that decision, as appears from the Commissioner's decision in *Ex parte* Nichols rendered in July, 1870 (C. D., 1870, 71). In 1872, however, two decisions were rendered by the Commissioner in which the position was taken that such second application should also be examined on its merits and the pertinent prior art applied to the claims. These were the cases of *Ex parte* Le Van (C. D., 1872, 40), and *Ex parte* Gordon (C. D., 1872, 145), decided in March and June, respectively, of 1872.

The latter case involved a so-called "renewal" under the act of 1870, which allowed six months for the renewal of certain applications rejected under former acts. The decision was based upon the terms of the act and therefore involves a special case having no real bearing on present cases.

The case of *Ex parte* Le Van, however, contains an argument for adding an action on the merits based on the prior art, which at first blush seems difficult to meet. It is this: if the case be rejected on *res adjudicata* alone the applicant must spend at least ten dollars additional in appeal fees before receiving an action on the merits, in the event the Examiner is wrong about the *res adjudicata*, whereas the statute provides for an examination on the merits for the first fee of fifteen dollars.

An answer to this argument, however, is to be found

in the fact that no one has a right to thrust useless work upon the Office merely by going through the form of filing applications. On this very point the Court of Appeals said, in the Barratt case cited:

> If a second application could be regarded as proper, why not ten or twenty successive applications? Where are the applications to stop, and what would become of the public business, if it were in the power of one person to obstruct the operations of the Patent Office by repeated and persistent applications? These questions answer themselves.

As to the extra cost of ten dollars which may be involved, this is, in any event, not conclusive against the practice, for the same objection might be raised against the present practice in requiring division. That, too, may involve the expense of an appeal prior to a full action on the merits. Yet the present practice on division was instituted on no less an authority than that of the Supreme Court of the United States, whose decision in the Steinmetz case took the appeal in the first instance in such cases away from the Commissioner, where no fee was required, and sent it to the Board, where a fee is required.

On this point it is also to be observed that the fee for appeal to the Board on the question of *res adjudicata* will cover any later appeal on the merits which may be taken to that tribunal, and such an appeal will almost certainly be necessary if the Examiner was originally of the opinion that the first and second applications were substantially identical.

Furthermore, the Examiner is unlikely to be in error in rejecting a case as *res adjudicata*. This ground of rejection is in fact applicable in relatively few cases. The tendency, if only from habit, is to exmine a case on its merits and the doctrine of *res adjudicata* is not apt to be applied except in a clear case.

Returning, for a moment, to the course of the Office decisions on the subject, it may be noted that in the case of *Ex parte* Arkell in June, 1877 (C. D., 1877, 73), prior to the Barratt decision by the court, the Commissioner

returned to the holding of the Nichols case of 1870, and in *Ex parte* Kenny, in October, 1905 (118 O. G., 2253), and *Ex parte* Millet and Reed, in May, 1907 (128 O. G., 2836), following the Barratt case, the practice of disposing of the case on the ground of *res adjudicata* alone was fully and specifically authorized. A still later case by the Court of Appeals of the District, *In re* Edison, decided in February, 1908 (133 O. G., 1190; 30 App. D. C., 321), recognizes the practice as correct and quotes the Barratt case with approval, though the decision went off on another point.

Under the existing authorities, therefore, it seems clear that the Examiner *need* not go into the merits of the second application. On the other hand, there is no ruling to prevent his doing so if the ends of justice seem to require it.

As to the character of the application which is subject to this rejection, it is obvious that the second case need not be an exact duplicate of the earlier one. Even the claims need not be duplicates, as will appear from *Ex parte* Millett and Reed and *In re* Edison, cited. The criterion is identity of the inventions claimed in the two cases. The advantage to be gained in saving of time and labor by an application of the doctrine manifestly diminishes rapidly with the divergence in the disclosures of the two cases in question, because the difficulty of determining identity increases in proportion as it is concealed by changes in disclosure and terminology. Nevertheless, if prior adjudication is a pertinent ground of rejection in any case, it should be used by the Examiner at least in connection with other reasons of rejection so that in the event of an appeal on the merits the complete situation may be laid before the appellate tribunal.

Ordinarily, the saving of work by applying the doctrine is considerable, since, as a rule, the finding of identity is easy, while the examination and application of the prior art is difficult and time-consuming.

The most common occasion for rejecting claims as *res adjudicata* is after an interference. Rejections under rule 132 are, in fact, nothing more nor less than this, as, of course, are the rejections of other claims to the

same invention as that in issue, whether contained in the same application or a different one. That an interference constitutes an adjudication in favor of the winning party, of all subject-matter common to the cases involved, is a familiar rule of frequent applicability. It has been so firmly established by the decision in Blackford *vs.* Wilder (127 O. G., 1255; 25 App. D. C., 535), and subsequent decisions of the Court of Appeals as to need little comment. It should be observed, however, that this rule obtains even in cases where the claims in question could not ordinarily have been introduced into the existing interference; provided, only, that the party to be rejected had notice of the fact that the subject-matter of those claims was subject-matter common to the cases.

Thus, in the case of Temple and Goodrum (176 O. G., 526), the losing party to an interference thereafter presented claims which read upon his own case and upon the two other cases with which he had been involved, but which could not have been added to that interference because of a decision in another interference adverse to one of the other parties. These claims were held *res adjudicata* because the applicant, had he chosen to do so, could have presented and contested them with the party who could have made them, concurrently with the other interfering subject-matter, although, necessarily, in a separate two-party interference.

Again, in the Marconi case (179 O. G., 577; 38 App. D. C., 286), Marconi had two applications disclosing different species of the same invention. One went into interference with Babcock, on specific claims. The other went to issue on claims to the other species. Marconi lost the interference and then attempted to reissue the patented case with broad claims. When these met rejection on the ground of *res adjudicata,* he contended that they could not have been made and adjudicated in the interference because he could only have presented and patented those claims, if at all, in the first case to go to patent, under penalty of having them held invalid by the courts. Nevertheless the Court of Appeals held that he was concluded by the decision in the interference because he could, if necessary, have filed his reissue application in time to have had it included in the

first interference, or could have prosecuted the claims through the interference in the pending case, and then transferred them to a reissue application.

A holding of similar effect was made in the case of Robinson *vs.* Copeland (187 O. G., 514 and 188 O. G., 1055).

Where the proceedings in an interference are such that the parties do not have the opportunity to inspect each others' applications, as where the interference is terminated by a concession of priority early in the proceedings, the doctrine of *res adjudicata* apparently does not apply to claims for matter not covered by the actual issue of that interference (Felsing *vs.* Nelson, 20 Gour., 6-12).

As a general thing the rule extends, however, not only to claims other than the precise issue but to claims presented in applications of other inventors than those actually involved in the interference when such applications or the inventions therein disclosed were controlled during the pendency of such interference by the same party in interest as the application actually involved. In the case of Temple and Goodrum above referred to the assignee of the losing party presented the claims of the issue in another application by a different inventor owned by the assignee at the time the interference was declared, and the Commissioner held that the prior adjudication was ground for rejecting such claims in that application as well as in the application which was unsuccessful in the interference.

This ruling was further extended in the case of Frickey *vs.* Ogden, decided in November, 1913, by the present Commissioner (199 O. G., 307). There, the second application in which the claims were presented, though owned by the same assignee, was not only by a different inventor but was not on file at the time the interference was declared. It appeared, however, that the assignee controlled both inventions at that time and could, had it desired, have filed the Frickey application in time to have it included in the interference, and it was held that the right of the assignee was *res adjudicata* and the interference was dissolved. This decision is not, of course, to be taken as holding that the doctrine will invariably be applied to such applications, because, like

other decisions, it is based upon a specific set of circumstances. It well illustrates, however, what a salutary use may be made of the principle, in Patent Office practice.

Formerly it was generally assumed that nothing short of a final rejection of claims *ex parte* or a formal award of priority in an interference was ground for a holding of *res adjudicata.*

In its decision in the Newcomb Motor case, however, rendered in 1908 (133 O. G., 1680; 30 App. D. C., 464), the Court of Appeals went farther than this. It held that a decision of the primary examiner rendered upon a motion to dissolve may, under certain circumstances, be a final adjudication. The circumstances in that case were briefly these: The Examiner held that Thompson had no right to make the claims, and dissolved the interference. An appeal from that decision was filed, but was afterward abandoned. Thompson then appealed the claims *ex parte,* and got them allowed. The Examiner thereupon redeclared the interference and Newcomb moved to dissolve, on the ground of *res adjudicata.* The Commissioner, when the question came before him, set aside all proceedings subsequent to the first decision of the Examiner dissolving the interference but ordered a reconsideration of that holding *inter partes,* with the right of appeal should the Examiner hold to his original opinion. The court's decision came on a petition for mandamus. It held that the Commissioner was without authority to order such a reconsideration and that Thompson was concluded, once for all, by the first decision of the Examiner when it became final by failure to prosecute an appeal therefrom.

It is important to note that the Examiner's holding was to the effect that the party had no right to make the claims and that the court apparently based its ruling upon the idea that this was equivalent to an award of priority to Newcomb so far as Thompson was concerned, inasmuch as a lack of right to make the claims is ground for awarding priority (Podlesak *vs.* McInnerney, 120 O. G., 2127; 26 App. D. C., 399). No dissolution of an interference on any other ground has, thus far, been held conclusive as to a party's right to a patent.

The *inter partes* consideration of the prior art, for instance, on motions to dissolve based on unpatentability is apt to be more thorough, if anything, than an *ex parte* consideration, and there seems to be no good reason why an *inter partes* determination that claims are unpatentable over the art should not be equally binding upon the parties, except that no *inter partes* appeal can be taken to the Court of Appeals on such a question under the present decisions of the court, and every applicant is, of course, entitled to the opportunity of appeal to that court upon the patentability of his claims before they can be held finally adjudicated against him (see Gold *vs.* Gold, 150 O. G., 570; 34 App. D. C., 229). Motions to dissolve, as such, can go no further than the Commissioner. Of course this objection applies also to motions to dissolve on the ground of no right to make the claims, but in the Newcomb Motor case, the court stated that the Commissioner undoubtedly had jurisdiction to go farther upon the decision of a motion based upon this ground and award priority to the party who could make the claims, and from such an award appeal could be taken to the Court of Appeals. Following this suggestion the Commissioner has in many cases awarded priority instead of dissolving the interference when a motion to dissolve, on the ground of no right to make the claims, has come before him, and the court has entertained appeals from such decisions (Cosper *vs.* Gold and Gold, 151 O. G., 194; 34 App. D. C., 194, and 168 O. G., 787; 36 App. D. C., 302).

As will appear from the cases which have been referred to it has frequently happened that the finding of *res adjudicata* has not been made until the case has become involved in an *inter partes* proceeding. This has usually happened, however, either because the rules which control such cases were in process of formation or because the Examiner failed to note the prior adjudication or disagreed as to its applicability. In all the various circumstances which have been here discussed it is the duty of the Examiner to use the prior adjudication as a ground of rejection in the *ex parte* treatment of the case, and to do so will often avoid the declaration of unnecessary interferences and their attendant complications.

March 18, 1915.

Mechanical Processes
AND
Functional Claims

A paper read February 18, 1915, before the Examining Corps of the United States Patent Office

BY

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WASHINGTON, D. C.
1915

Mechanical Processes and Functional Claims

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There are few, if any, classes of claims more difficult to deal with than those coming under the above headings, and perhaps none in which the decisions seem more at variance. This lack of apparent uniformity is, of course, largely due to the fact that no two cases present precisely the same state of facts. From this arises the practical difficulty that the citation of a number of decisions by the Examiner is usually met, on the part of the attorney, by an even more formidable list. Decisions are thus chiefly useful in enabling the Examiner to make up his own mind; they are rarely effective in convincing the attorney of the error of his ways; and even where the Examiner is sustained on appeal, the reasons and decisions relied on by the appellate tribunal are frequently quite different from those cited by him in the primary consideration of the case.

It will be of some assistance to the young Examiner if he will bear in mind the order of importance of the various tribunals whose published decisions are supposed to guide him in his work. This order, which is not the same in the Office as in outside legal practice, is believed to be as follows: 1st, the Commissioner then in Office; 2d, the Supreme Court of the United States; 3rd, the Court of Appeals of the District of Columbia, and 4th, the various Circuit Courts of Appeal. The decisions of the Commissioner are placed first in the order of importance because he is the responsible head of the Office and all patents are issued in his name. It is to be presumed

that his decisions are made with a due regard for those of the courts and he is entitled to have his interpretation of the law followed by the Office force. The District Court of Appeals is given preference over the Circuit Courts because it has the final voice in most matters arising within the Office and it would be obviously improper and incongruous to do otherwise than follow such courses of procedure as it may indicate. No attempt will be made in this paper to give an exhaustive list of decisions bearing upon the subjects under consideration. The few cited are mainly those which are believed to be in harmony with the present Office practice.

There never seems to have been any doubt but that inventions which related to the production of a definite product, and imvolved chemical or other elemental action were proper subjects for process claims. In the case of articles which involved merely a change in form of the material acted upon, however, the question was long in doubt. In 1895 the Supreme Court in Risdon Iron Works *vs.* Medart, 71 O. G., page 751, said "Processes of manufacture which involve chemical or other similar elemental action are patentable, though mechanism may be necessary in the application or carrying out of such processes, while those which consist solely in the operation of a machine are not."

The Supreme Court was still in doubt on this subject in 1898, see Boyden *vs.* Westinghouse, 83 O. G., page 1067, wherein the following statement is made: "Risdon *vs.* Medart, and other cases, assume, although they do not expressly decide, that a process to be patentable must involve a chemical or other similar elemental action, and it may still be regarded as an open question whether the patentability of processes extends beyond this class of inventions."

It should be noted that four justices dissented from this opinion. These statements of the Supreme Court were quite generally taken as precluding process claims in the absence of elemental action. Not all of the courts, however, adopted this construction, and in 1901 the Court of Appeals of the District of Columbia in In re Weston, 94 O. G., page 1786, expressed the opinion that processes involving simply mechanical changes in the

material acted upon might be patentable if the processes could be performed by hand or by mechanism other than that shown or preferred. For the sake of comparison with later cases, Weston's claim 1, which was allowed by the court, is here quoted:

> "1. The described method of manufacturing a symmetrical coil for an electrical measuring instrument, consisting in first forming a supporting frame or spool by subjecting a short tube of metal to pressure until the desired conformation and shape is obtained, then winding the coil thereon and finally securing the pivot pins in the axial line of the coil."

In 1909 the Supreme Court set its seal of approval upon this type of claim in the Expanded Metal Case, 143 O. G., page 863, wherein it held valid a process claim for making metal lathing from sheet metal. The process in this instance could be carried out by hand although for profitable commercial purposes a specially designed machine was required.

It will be noted that in the foregoing instances and in fact in the large majority of cases which have been passed on by the courts, the process produces a definite, tangible article. In certain divisions of the Office, however, cases of alleged mechanical processes are constantly being filed which relate merely to the production of power and perhaps also its application to a driven shaft. These cases have a certain likeness to those of the most approved process type in that they involve an "elemental" action consisting in changes in temperature, pressure, degree of moisture and sometimes in the chemical composition of an expansible fluid. There is, however, no tangible product produced and the element subject to change usually passes through a definite cycle or cycles at the end of which it is either restored to its original condition or is exhausted as a waste product of some description, usually a gas.

While not strictly analogous, the following claim declared valid by the Circuit Court may be of value:

> "The herein described method of changing the speed of an electric motor which consists in main-

taining upon each one of three or more conductors a potential difference from that on any other one of the conductors and connecting the armature terminals of the motor with different pairs of said conductors."

See Bullock Electric Mfg. Co. *vs.* Crocker Wheeler Co., Federal Reporter, Vol. 141, page 101.

In the absence of authoritative decisions upon this class of cases, those Examiners who have frequently to deal with such processes may be interested in the following claims which have been recently passes upon by the Examiners-in-Chief.

The first application discloses a steam turbine and a hot water heating system. Steam is withdrawn from an intermediate stage of the turbine and used to heat the water in the system. The amount of steam so used is regulated by varying the speed at which the water is pumped through the heater.

The claim which was held on appeal to be a proper process claim is as follows:

"The herein described process of variably regulating development of power and heat in a combined power and heating system, which comprises expanding a heated expansible working fluid in a suitable motor, withdrawing a portion of such working fluid from an intermediate expansion point of the motor, and exchanging heat between the working fluid so withdrawn and another fluid to be heated, and variably regulating the rate of absorption of heat by such second fluid with respect to the rate of supply of working fluid to said motor, and thereby variably regulating the proportion of the initial heat energy of such working fluid converted into power to the heat energy imparted to said heating fluid."

In the second application a boiler supplies high pressure steam to a water injector and the combined mass of steam and water is delivered against the blades of a

turbine rotor. All of the steam is then condensed and pumped back into the boiler.

The following claim was held on appeal to be a proper process but was not allowed on account of references:

> "The method of operating automobile power plants employing low speed steam or gas turbines, which consists in generating an expansive fluid at high pressure, converting the energy thereof into kinetic energy in a fluid of higher density, thereby imparting a low velocity to the denser fluid, delivering the last named fluid to a rotary part of a suitable turbine, and condensing and returning in the system such of the fluid as has become evaporated."

The third application discloses a turbine consisting of a number of thin, closely spaced discs, transversely mounted on a shaft and enclosed in a casing. A nozzle in the casing admits steam against the edges of these discs and tangential to their peripheries. The steam winds around in a spiral path between the discs, causing them to revolve by its adhesive action and is finally exhausted through openings in the discs near the center.

The original application disclosed both apparatus and method claims, but the method claims were later canceled and presented in a divisional case in order to secure a speedy allowance of the parent application, which application became a patent shortly thereafter. It should be noted that division was not required by the Examiner.

The claim presented in this case is as follows:

> "The method of deriving energy from a fluid under pressure which consists in causing it to flow through unobstructed passages in a runner rotatably mounted in a closed casing so that it is free to follow natural spiral paths from peripheral ports of inlet to central ports of outlet, and thereby propelling the runner by the adhesive and viscous action of the fluid upon the plane surfaces of the passages therein."

The Examiners-in-Chief sustained the rejection of this claim, stating that in spite of its being nominally a process claim it was in reality an apparatus claim, and would have precisely the same scope if written in the following form:

> "A machine for deriving energy from a fluid under pressure through the adhesive and viscous action thereof upon plane surfaces which comprises a runner rotatably mounted in a closed casing, a peripheral port of inlet, a central port of outlet, and an unobstructed passage through the runner such that the fluid is free to follow natural spiral paths in its passage through the machine."

The appellate tribunal further held that such a claim as the foregoing could have been presented in the original application or in a reissue thereof, and that to allow the claim or a substantial equivalent thereof in another case would result in extending the monopoly conferred by the first patent. They called attention to such decisions as Century *vs.* Westinghouse, 191 F. R., page 350; Thomson *vs.* Hoosic, 80 O. G., page 967, and Miller *vs.* Eagle, 66 O. G., page 845. The purport of these decisions is that while a patent for a process may issue after the grant of one for the apparatus, a second patent which merely covers the same invention in somewhat broader terms is ordinarily invalid.

The case just considered sets forth a unitary structure through which the steam passes steadily in a path absolutely determined by the construction of the engine and which no change in size or proportions would affect except in degree. It would seem, therefore, that the action of the steam is just as much a function of the machine as is the action of a train of gears in a clock mechanism.

The first two applications set forth groups of devices which might be combined in various ways and in which differences in proportion or in manipulation of the various parts will produce widely different results.

In the first case all of the apparatus assembled in the same relation was shown in a single reference, yet the claim was held to be for a valid process because a certain

pump was manipulated in a way not contemplated by the patentee.

While in no sense conclusive, the following considerations may be found useful in dealing with alleged process claims involving the production of power by the use of an expansible fluid, and possibly in certain other cases where no tangible product is produced.

First: A process is not anticipated by an apparatus which might be used to carry out the process but was not, in fact, intended to do so.

Second: There is probably no patentable process in a single machine using an expansible fluid, where the cycle of change in the fluid is uniform and definitely fixed by the construction of the machine.

Third: There is a presumption of a patentable process in the arrangement of a group of devices to produce a novel result, particularly where matters of proportion and relative position are important. This presumption is considerably strengthened if the process necessitates the manipulation of one or more of the devices involved.

If applications of the kind under consideration are not patentable, it is usually because the alleged process is in reality merely the function of the machine, and this leads naturally to the consideration of functional claims.

It is so well recognized that direct claims for a function are not patentable that such claims are never presented except by an occasional applicant who is quite unfamiliar with patent practice.

The greatest difficulties arise in connection with claims containing one or more clauses beginning with "means," "mechanism," or some similar expression, and followed by a statement of the function performed thereby. There has been considerable variation in the liberality with which such claims have been regarded.

The Supreme Court has several times set its seal of approval on claims involving sets of mechanism defined by the result produced, see, for instance, Morley *vs.* Lancaster, 47 O. G., page 267, in which the following claim was held valid:

> "The combination, in a machine for sewing shank-buttons to fabrics, of button feeding mech-

> anism, appliances for passing a thread through the eye of the buttons and locking the loop to the fabric, and feeding mechanism, substantially as set forth."

The ideas expressed by the court in these decisions were elaborated and possibly carried further than the court intended in a series of Commissioner's decisions extending over the next ten years; see, for instance, Ex parte Pacholder, 51 O. G., page 295; Ex parte Halfpenny, 73 O. G., page 1135, and Ex parte Knudsen, 72 O. G., page 589.

This last decision has become almost a classic and for years no examination for promotion was considered complete in which it was not involved. It divides functional claims into four classes, of which only the third is of interest here.

This class defines the construction as "means," "mechanism" or "devices" for effecting certain results or it defines certain named elements by statements of function instead of structure. The decision further states:

> "The use of the above noted phraseology does not of necessity render a claim objectionable, for where the idea is clearly stated and the combination or relation of parts to produce a desired end is plainly expressed, the breadth of statement of the claim is no reason for objecting to it. . . . When indefinite, such claims should be objected to; but they can only be rejected on references when these disclose both the complete combination and the functional qualifications covered by the claim."

The result of this decision and others of like nature, was that the attorneys, and to some extent the examiners, came to consider that a claim was patentable over the art if it contained a clause prefaced by the word "means" followed by a statement of a novel function. There was a gradual reaction from this extreme view, the present practice being more nearly that indicated by the District Court of Appeals in In re Gardner, 140 O. G., page 258.

In this decision the court ruled adversely on the following claim:

> "In a vapor register, in combination with a suitably inscribed dial, a device for automatically indicating thereon simultaneous pressures and heat characteristics for superheated vapor."

In spite of the use of the word "device" this claim was held to be substantially a claim for a function since it apparently covered all means by which the function could be carried out. The court also called attention to the Supreme Court decision of O'Reilly *vs.* Morse, 15 Howard, page 62, the bearing of which on this class of cases had been largely lost sight of. In this case, although the court held that Morse was the first to convey intelligence by electricity, it denied him a claim covering broadly "means" for so conveying intelligence while allowing him a claim for "electro magnetic means" for the purpose.

It is not believed that there is any conflict between the decisions just considered and those of the Supreme Court which sustain certain claims for sets of mechanism. A claim for "means" for performing a particular function is certainly indistinguishable in scope from a claim for the function itself; while a claim involving sets of mechanism, even though each clause be for "means, etc.," is not a claim for a result but rather for a series of steps for obtaining it, and the field is still left open for others who attain the same end by the use of more or fewer or different elements.

The essence of the Gardner decision would appear to be that an inventor is not entitled to a claim in which the whole novelty consists in a single statement of function even if the clause is headed by the word "means" or some similar expression. There must be some hint as to the nature of the means, some suggestion of structure which will aid other inventors or the courts in applying the doctrine of equivalents.

Claims of this type are sometimes rejected as being "broader than the invention." The fundamental difficulty appears to arise from the fact that the patent law makes no provision for the patenting of a function or result, but only of the means whereby it is accomplished.

Furthermore, an inventor is only entitled to protect the means which he actually discloses for the purpose *and substantial equivalents thereof*. He should not, therefore, be allowed a claim which appears to cover *all* means whereby the result may be accomplished, since to do so gives the public the impression that the whole field of invention in that particular line is closed, and also imposes an unnecessary burden on the courts by forcing them to read into the claim limitations which are not apparent on its face.

It would certainly be to the advantage of inventors of machines, and would perhaps result in more even justice, if our laws, like those of Germany, permitted functional claims. A discoverer of a new function often makes quite as valuable an invention as the discoverer of a new process, and it would seem as though he was entitled to equally broad protection.

At present he must steer between the Scylla of a process claim, which the Examiner will probably reject as being for the function of the machine, and the Charybdis of an apparatus claim which, if as broad as the other, is likely to be opposed by such decisions as Gardner and O'Reilly *vs.* Morse.

The Supreme Court in Steinmetz *vs.* Allen, 109 O. G., page 549, called attention to the fact that process and apparatus may approach each other so nearly that it would be difficult to distinguish the process from the function of the machine and indicated that in such cases of close relationship both kinds of claims might be joined in a single application, although the court did not go so far as to state that either set would be invalidated if applicant elected to patent them separately.

In doubtful cases of this kind it is probably best to allow the applicant both process and apparatus claims, providing they are presented in a single case. It would be manifestly improper to hold that the alleged method set forth merely the function of the machine and at the same time to require division, for the mere presence of the doubt is sufficient to show that but one invention is involved and that the sole question at issue is the manner in which it shall be expressed. If the applicant takes out a patent containing simply apparatus claims,

there is considerable danger that he will not secure the measure of protection to which he is entitled, while if it contains only process claims he is liable to have the court invalidate them as being functional. If the two sets of claims are presented in separate patents, there is danger that one patent or the other will be invalidated as unlawfully extending the monopoly unless both patents issue on the same date. It would appear proper in copending applications of this kind for the Office to require a consolidation of the claims in a single case and, in the event of a failure to comply, to reject one of them on the other as soon as that other was passed to allowance.

February 18, 1915.